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Truro Cathedral.

THE opening of this cathedral, the first entirely new cathedral consecrated in England since St. Paul's, is an incident of considerable interest, architecturally as well as from other points of view. The circumstances are different, certainly. St. Paul's was built at a time when Church feeling, as now understood, was at a very low ebb, and when architecture spurned all reminiscence of Mediæval barbarism as a thing almost beneath its notice. Truro Cathedral is the offspring of a revival, or so we are assured, of the Mediæval church in her earnestness and her aspirations, and is built by an architect who has studied Mediæval architecture in preference to any other style, and whose evident object it is to restore the Mediæval cathedral as fully as possible.

We fear it cannot be hoped that Truro will ever reach the reputation enjoyed by St. Paul's as a powerful and original architectural design; the detail is even more conservative and more of a reproduction than the Renaissance detail of Wren; and the general design, if one may compare buildings so different in their style, is certainly far inferior to Wren's in dignity, power, and unity of conception. It has its points of special interest, however, beyond those of mere Gothic correctness.

The cathedral, as most of our readers are aware, is nothing like complete, and we fear it is somewhat doubtful whether the funds will ever be raised to complete it. The fact is, the position is unfortunate for those who take an ecclesiastical view of things. The whole of that part of England is very much permeated by "the demon of Dissent," and we heard it roundly asserted by influential people in the neighbourhood that Truro did not want a cathedral, and that it was a foolish expenditure of money. Many of those who hold this view have, nevertheless, from what may be called an *esprit de* county, and from a hatred of being thought illiberal, subscribed pretty largely to the new cathedral; but it is more than hinted that this flow of liberality is now run out. With the wisdom or unwisdom, the necessity or otherwise, of dividing the Exeter diocese and founding a separate bishopric at Truro we have nothing to do; but since it is founded, we certainly desire that the new bishop should have a cathedral, and as fine a cathedral as circumstances will admit of, just because a cathedral is a beautiful thing, and forms a centre for the artistic and musical life of the district; a place where people may see something grander and nobler than they can see in their ordinary parish church (or chapel); and we should imagine that even Dissenters of the more cultured order would like a cathedral as a place to see and go into, even if they declined on conscientious grounds to join in the service. For these reasons, and apart from any questions of religious sect, we very much desire to see Truro Cathedral completed, and we think it will be for the general good and happiness of the greatest number that it should be completed.

The complete plan of Truro, as proposed, includes a nave and choir; principal transepts at the crossing and subsidiary eastern transepts; a cloister and an octagonal chapter-house on the northern side of the cathedral; a centre tower with spire; two smaller western towers; and a campanile or small tower at the eastern side of the south transept. Of this there is now built the choir and both transepts, and two bays of the nave, on plan; the central tower is carried up to such a height that it just clears the nave roof, and the small tower or campanile adjoining the transept is completed.

The first glimpse of the cathedral on going up the narrow street facing the south transept is decidedly disappointing. The design and detail of the aforesaid campanile is prominent, and it is not happy. It produces the impression of a rather hard, thin, straight-lined structure, with a square-sided pyramidal copper-covered roof (a very ugly form) rising from a very slight corbel table or eaves moulding; the clock, projecting at right angles to the wall, is a miserable little affair; the whole thing looks poor and hard, and (which is a very serious defect) it looks out of scale; it looks like a tower of small size built on the scale and lines of a larger one, and we are at once convinced that if we saw it in a drawing with no figures to give scale to it, we should take it for larger than it is. The sense of thinness is increased by the fact that the upper portion, in which is hung the old peal of bells formerly belonging to the Church of St. Mary which stood on this site, is cut up into long narrow openings with neither glass nor lucarnes in them,—simply bare slits; and we are told it is not intended to put lucarnes: if so, this is a great mistake, the tower would look twice as well with something to fill up these blank openings. It is a very unfortunate feature to have standing as the prominent one on the approach to what is at present the main entrance; but it must be added that this tower is decidedly the weakest portion of the exterior design. The adjoining transept has a front much more effective than the campanile seems to promise. There is a cleverly-contrived and richly-decorated porch (the carved decoration being, however, not all completed yet), of three arches, and with the side arches and their superstructure canted back at an obtuse angle with the centre portion; above the balustrade of the porch rises a large recessed arch, with a drop moulding in the archivolt, giving a deep shadow, and including under that a large circular window: the gable of the transept is covered with a hatched wall diaper. To the left is the baptistery, which is fitted in at the angle of nave and transept, and shows a segment of a circle externally. The style of the building is Early English, of somewhat the type of the portions of the same date at Lincoln, mingled with a certain character which belongs to Mr. Pearson's church buildings, and is more easily recognised than described. There is the solidity (on a smaller scale) of Lincoln, but not the grace and refinement; but there is, at all events, no gimcrack, no "pretty Gothic" about it.

Eastward of the transept occurs one of the most interesting features, both externally and internally,—the old aisle of St. Mary's Church, the only portion of the older edifice which was thought worth preserving, but which certainly was, and it has repaid the modern architect's care and reverence for it by leading him to what is, in fact, the most interesting portion of his design, to be described further when we speak of the interior. The aisle is an example of very good late work of very marked characteristics. It stands, or is left, just outside of the south aisle of the choir, and nearly flush with the south wall of the transept, thus filling up an angle of the site at this part. The wide windows are segmental-headed, divided into two main lights by very thick mullions branching each way at the top, and subdivided further by mullions of a subordinate order. Above the windows runs a string-course, and over it a line of flatly-cut quatrefoil panels, and then a battlemented finish. Above this rather rich-looking piece of late work we see the more solid-looking and rather Lincoln-like clear-story of the new building, with its flying buttresses coming down and losing themselves to the eye behind the interesting battlements of the old aisle; and what the flying buttresses abut upon we will see when we come inside; for that is the pith of the matter. The eastern transept is not defined on the ground plan externally, but rises above the aisle roofs; the main feature in it is a group of four large separate lancet windows, regularly spaced. In the opposite or north-east transept there are also four windows, but they are in two couplets separated by a central pier, and are further divided vertically into two stories by a cross row of large quatre-

foil lights. This slight variation of corresponding portions of the building is a characteristic feature of it, and is illustrated in various other ways. The east end is a fine and bold piece of design, though here we think that the representation of it in drawing would convey the impression of larger scale than it actually is; in other words, that the design is of that plain and monumental kind which would be more suitable, and would tell better, on a building of the largest scale than in this comparatively small one. The windows are plain lancets, in two stories, the lower ones with small buttresses between them, and with very deep jambs and archivolt mouldings, producing a deep and effective shadow; the upper tier of windows are loftier in proportion, and treated in a rather lighter manner. The main buttresses here and elsewhere are of the type of design which we are accustomed to in Mr. Pearson's churches, running up with very straight unbroken lines for a great part of their height, before any set-off is made. It is a form of buttress which conduces very much to a generally solid and monumental appearance, which the eastern portion of the Cathedral certainly possesses. The walling, which is externally of Penryn granite with Bath stone dressings, has been admirably executed; no better work could be seen.

On entering by the south transept door we find ourselves in a modern Gothic interior, which is a more complete combination of new workmanship and Mediæval forms than anything since Street's nave of Bristol Cathedral; only that was a modern completion of a Mediæval design, this is a modern Mediæval design entirely. The impression of a certain want of solidity, and deficiency in scale, which we noticed in the exterior, is not characteristic of the interior. The whole is in keeping, as an example of a well-built and carefully-designed cathedral, of the second order of size, a cathedral to be classed, when completed, with such buildings as Norwich and Wells in regard to scale and dimension. The interior is consistently carried out in Early English style, of rather early than late type; there are hardly any carved capitals, almost the entire decorative expression depending on severely-designed mouldings of the orthodox Early English type, and at this part of the church almost the only ornament visible is a couple of "dog-tooth" enrichments in the crossing arches. The crossing piers consist of a cluster of larger and smaller shafts, unbroken by bands, except on the shafts next the abutting wall planes, where the string-courses at the base of the triforium, and the upper members of the caps of the transept arcade, just clip the adjacent shaft, so as to give a connexion between the piers and the adjoining work. The crossing arches are scored with a deep shadow on either side of the central moulding, outside of which again come the dog-tooth members aforesaid; it makes a fine and effective arch, but to all appearance a little too flat in section to be entirely in keeping with the style selected; at least, it has that effect from below, so far as the central portion of the arch mould is concerned. The outer members of the arch do not descend to the impost, but meet on a small angle-shaft standing on the main caps; pretty, but a little at variance with the effect of solidity which one demands in such a situation. Above the crossing arches there is a massive and heavy corbelled cornice supporting a gallery with a balustrade pierced with quatrefoil openings, and above this is a lantern-stage with an arcaded gallery round. The corbelling under the gallery is curiously irregular in the spacing and size of the corbels, a fancy of which we fail to see the advantage, unless they are old details worked up.

The main composition of the lower portion shows the orthodox arrangement of arcade, triforium, and clearstory. The transepts have two narrow bays on either side of the crossing, except on the south-west side, where the baptistery is fitted into the angle between transept and nave, and opens by a large arch to the transept with two sub-arches carried on a slender pier with four shafts of the grey Polyphant stone which has been used for thus giving play of colour and accentuation to the lines of piers and vaulting shafts. This stone is introduced in thin shafts, in the crossing piers, the vaulting shafts, and elsewhere; its tone is a very agreeable light grey, with a slight mottle on it, just sufficient to give a little surface and texture. The triforium is very boldly treated in the transepts, with two orders of shafts carrying arch-moulds over the whole bay, the outer one (carried by a grey shaft) moulded, the inner one simply chamfered; a third order of shafts fills up the space with a sub-arcade, carrying a spandrel wall pierced with one or more quatrefoil openings, with a small dog-tooth on the edge, the effect of which is not happy; it gives the openings a ragged look. The clearstory is a large one, of two-light windows, with a long detached shaft on the inner wall plane, leaving a gallery passage between it and the window. The vault is a simple quadripartite with cross-ribs dividing the bays, lined out with an effective section giving a couple of thin dark lines on either side of the central roll.

The north transept design, which faces one on entering the door, shows a gallery carried on two arches on the ground story, the imposts ranging with those of the transept arcade, but the arches kept lower. As we have before observed, there is a constant variation of treatment about the interior, another of the points in which it so strongly resembles a Mediæval cathedral. Above the gallery, which has a balustrade pierced in quatrefoils, is a range of three two-light windows, with cinquefoil lights in the heads (plate-tracery); and above these the whole of the transept wall is filled up by a very large circular window, treated not exactly "wheelwise," but with four large circles filled up by smaller ones, and subsidiary tracery forms, and filled with stained glass.* This glass is most happily designed for the situation. It is true that the subjects cannot be made out from below, at least without a lorgnette; but, for ourselves, we opine that the spectator need not afflict himself about that. One sees the very best stained-glass windows rather by faith than by sight. It is satisfactory to the intellect to know that it is not designed by accident, and does mean something; but the main point is that it should produce a fine and rich effect in the *ensemble* of the interior; and Messrs. Clayton & Bell have succeeded in that. There is a rich, uncertain, jewelled effect in the north transept window which is very satisfactory to one's sense of the picturesque: we care not for more, having no kind of doubt that the legends embodied in it are perfectly orthodox and appropriate, and perhaps their very uncertainty to the eye allows one to give a wide range to their meaning. Viollet-le-Duc has related how, when he was first taken into Notre Dame as a child, he thought the sounds of the organ proceeded from the colours of the great rose-window; and that is not a bad way to think of a stained window,—as a kind of coloured music.

The design of the south transept wall (it will be understood that we have been standing with our back to it all this time) shows a circular window also, and beneath it a range of three windows treated differently from those of the north transept; single lights, deep-set in the wall, with a massive pier between them, pierced through for the triforium passage. These have been filled with stained glass, which the corresponding range of lights in the north transept very much require, for at present their mass of light beneath the coloured circular window has a very harsh effect. The circular window in the south transept is designed more on the radiating or wheel fashion. We approve of the variation, but prefer the design of the north window; the south is somewhat mechanical, and does not lend itself to stained glass effect so well.

The baptistery, to which we have already referred, is a very pretty architectural incident of the church. A square-vaulted bay, making a kind of ante-chapel to it, intervenes between it and the west wall of the transept; then comes the actual baptistery, a circular-vaulted compartment with one-quarter of the circle defined by the outer wall, the remainder by piers and arches which are ingeniously and picturesquely connected with the main work around them. The floor is raised on two circular steps of marble, which are again raised on a single marble step following the square outline, and also faced with dark polished marble. The floor is laid with a geometrical design in coloured marbles, looking well enough, but not Mediæval in character, nor in fact with very much character about it at all. It would have cost no more in the working to have made it of a more thoughtful and characteristic design. The font, again, is raised on three circular polished marble steps, two of dark grey and one of an amber-toned veined marble. The base and bowl of the font are of a dark red marble, with shafts of very dark green veined with a lighter colour. The carved caps of the shafts come out badly in this dark material; the modelling does not define clearly, and they look like irregular spongy masses; a point to be remembered in treating material of this kind: it will not repay elaborate carving. The font-cover is of wood of the miniature tracery and buttress work of which there are so many examples, ancient and modern: it is well enough done, but it is like a great many other things of the same kind, and is almost ostentatiously devoid of originality or novelty. The outer wall of the baptistery is decorated with a wall-arcade of trefoiled arches with dark marble shafts. The baptistery is lighted by narrow lancet windows, filled with stained glass, with small pictorial subjects divided by stages of diaper work; the general effect is good.

The choir is raised, between the main arcades, on a flight of three steps in the first instance, bottom and upper ones of grey mottled marble, the middle one of nearly black marble;* these project out into the crossing, leaving a small platform on the upper step; and a fourth marble-faced step rises flush with the inner order of the crossing arch. In the choir the same general architectural ordinance is repeated as in the transepts, but with some variation and enrichment of detail. The arches are enriched with dog-tooth ornaments; those of the triforium also with these and other enrichments; and one or two of the triforium caps on the south side are carved with the usual form of Early English foliage, rather capriciously used, as if by accident or by an inspiration of the workman. Whether the intention was to give this kind of idea we know not. The vault is of the same simple character as in the transepts. The vaulting surfaces in both are left perfectly plain, of unadorned courses of stone, but in the choir the transverse vaulting ribs are enriched. The plan of the choir piers is very effective, consisting of two large cylindrical members, columns one quarter engaged to each other in fact, coupled in the transverse direction of the building, and with a much smaller shaft in the nook formed by their junction on the east and west side of each pier. This is a most effective pier, and its breadth and massiveness of appearance give additional effect by contrast to the rather delicate lines and shadows of the arch mouldings. The choir arcade is very lofty in its proportions; perhaps it would be more correct to say that the arches are very narrow, for the scale of the architecture is

* We gave a brief summary of the subjects of the stained glass windows in the cathedral in our last issue, pp. 626-7 *ante*.

* We give, from the authorised handbook to the Cathedral (which, by the way, is disfigured by most wretched illustrations) the following particulars as to marbles used in the choir floor. The steps are of Frosterly marble and serpentine alternately. The mosaic panel between the two highest of these first steps is formed of varied Devonshire marbles with the exception of the small green squares, which are of Vert Antique. The pavement in the centre of the choir is formed of various designs in dark red (Griotenstein) dark green (Vert des Alpes), with large red squares (Rouge Royal), the cream-coloured bordering being of Jura marble. Between the next steps are two long panels on the north side, with light red slabs (Rouge de Veronne), dark red (Rouge Royal), dark green (Vert des Alpes); on the south side, light green slabs (Cippolino), and dark red (Rouge Royal). The next level is laid with red marble (Gretenstein), green (Cippolino), and cream coloured (Hauteville). The veined steps of the Sanctuary are of Pavonazza marble, and the mosaic of dark red (Rosso Antico), light red (Rouge Jasper), dark green (Vert Antique), and light green (Irish). In the panel between steps 1 and 2, is the bright blue circle in the centre, of Lapis Lazuli. These marbles are gifts from various individuals.

small, and the whole effect is that of elegance rather than power. The choir floor is raised a step at the middle of the third bay from the crossing, and another step at the eastern pier of the fourth bay: at the eastern pier of the fifth bay is another step with the altar-rail. The vaulting shafts are stopped on corbels on three of the piers; the two easternmost ones descend to (or rather rise from) the floor; we wish they all did; the springing of them from a corbel half-way up the pier has the sanction of precedent, of course, but it has an unsatisfactory effect, and injures the constructive unity of plan and superstructure. At the eastern end of the choir is the second transept already alluded to, flanking the sanctuary with two lofty arches, from which a flood of light descends at this point, with very fine effect. The altar-space is flanked by a richly-designed screen with sedilia at each side, and at the back is the lofty and very richly-carved reredos, forming a very effective termination to the vista of the lower portion of the building. An ambulatory is carried round behind this screen, and above it are seen the three large lancet windows, a little too wide in proportion to their height, for our thinking; they would have done with a little more jamb and little less glass, but they nevertheless make a fine termination to the architectural vista, and the stained glass here also is very rich and jewelled in effect. The vault cuts rather awkwardly down upon the windows: not more so than in many Mediæval cathedrals, but it is a defect nevertheless, which it would have been much better to have amended than to have copied; but, of course, we do not expect to persuade modern Gothic architects of that. The general appearance of the chancel is very rich; the steps around the space and around the altar are of Pavonazza marble; the altar frontal is a fine piece of textile design; the rail is a good piece of brass work. The floor here, as in the baptistery, is the weak point. It is sumptuous enough in its material,—an inlay of various polished marbles; but, in the first place, the designs themselves are commonplace, and present little or no thought or invention, relying apparently only on the beauty of the material (which is the most vulgar source of effect); and, secondly, what design there is is distinctly Classical in character and out of keeping with the ruling architectural style of the building.* Of course something is to be said for convenience of treating the material; circular centres of various colours are a feature to which marble inlay lends itself very well; but more thought might have produced a more artistic and original floor, in keeping with Mediæval feeling, without much more expenditure of work in cutting out the marble; and we cannot but think that in this portion of the building (the marbled floor, by the way, extends over the greater part of the choir, though very much concealed under matting) the effect produced is by no means proportionate to the value of the materials and the work, and a little more care in design bestowed on it would have made a great difference in this respect. How far the architect is responsible for all these details we know not.

The choir aisles follow the lower level of the nave, and would seem to be designed to be simply ambulatories, but the southern one is furnished with seats. Adjoining this southern aisle is the old aisle of old St. Mary's Church, to which reference has already been made, and here is certainly the most interesting and original portion of the interior of the cathedral, which presents at this point an appearance as picturesque as it is unique. The desire to preserve the whole aisle, the only portion of the old church, we are told, which was worth preserving, was encumbered by the practical difficulty of finding abutment for the choir vault of the cathedral. The manner in which this has been done constitutes, to an architect at any rate, the most interesting point in the cathedral. What would under ordinary circumstances have been the outer wall of the southern aisle becomes an arcade. Three or four feet distant from this is another arcade, supporting what is really the north wall of St. Mary's aisle. On the other side of this arcade is the aisle itself of the old church. Between the two arcades are solid walls carried by cross arches, on which are seated the buttresses against which, above the roof, abut the flying buttresses which cross the cathedral aisle and take the thrust of the central vault of the choir. These cross walls, where visible internally, are panelled in the manner of late Gothic work, thus making an architectural transition from the early Gothic style of the new building to the late style of St. Mary's aisle. The latter is divided from the cathedral by an arcade of segmental arches, making another of the varied incidents of the interior. A more happy instance of making an architectural beauty out of a constructive difficulty has seldom been seen; it is a thing done in a true architectural spirit, and Mr. Pearson may well be proud of it.

On either side of the choir, towards the east end, are the steps leading down to the crypt, which is a very extensive one, with all the characteristics of an ancient crypt; in particular, the pretence is kept up of its being of an earlier date than the work above it, and the capitals and vaulting ribs are of distinctly Transitional character: a little architectural joke which may be pardoned. It is quite in keeping with constructive requirements that the crypt should be of a more solid and massive architecture than the superstructure; and as we are dealing at Truro Cathedral entirely with reproductions of old styles, it seems quite in keeping to choose an older and more massive one for the architectural treatment of the crypt: if we are doing archæological architecture let us be quite consistent, and do it thoroughly. The architectural effect of the crypt is marred by its being cut up into vestries, &c., so that the vista through it is destroyed. In the crypt is kept the church plate, which has been mostly specially designed, with the exception of an alms-plate of Renaissance design (not of Renaissance date), presented by a well-wisher; the chalices, patens, and crosses are all of the established Mediæval pattern, and call for no special remark, with the exception of one presented by the bishop. This represents the value of many rings and jewels, which were presentations to the bishop at different times, and which he wished to consecrate to church use; and a large number of these have been worked into the design; set in the body of the chalice according to a symmetrical scheme. The effect is very good and original. The chalice follows also the usual lines of a Mediæval chalice, and none could be better, either practically or artistically; but there is a good deal of originality of detail, especially in the manner in which the jewels on the base are set in the middle of a delicate meandering pattern of conventional foliage lines relieved on the surface of the metal.

The reredos, which is crowded with sculpture, is rather injured in architectural effect by a want of duly emphasised architectural lines of construction; it is a mass of carving, rich in effect, but somewhat over-elaborated; there are no plain surfaces or sufficiently prominent mouldings to architecturalise it, so to speak, and the consequence is a somewhat pie-crust effect, taken as a whole; the top line of it is too level and unbroken, it wants outline. The central portion of the sculpture represents the Crucifixion, with our Lord in Majesty above; the side portions are occupied with sculptures of typical events in Old Testament history, and figures of prophets and apostles. The work was executed by Mr. N. Hitch, of Kennington; and in detail there is much fine work in it.

The Bishop's Throne, on the south side of the choir, is a fine piece of woodwork, executed in Burmese teak, by Messrs. Luscombe & Son, of Exeter. Over the seat is a spire of open work and pinnacles, which is very well executed, but seems rather cut short in proportion; it has not the soaring effect which might have been obtained by loftier proportions. The whole of this, however, is excellent carved work of its kind, crisp and effective, and not over-finished; and the poppy-heads to the divisions between the bishop's and the chaplain's seats are vigorous and original both in design and execution. Two of them contain figures, back to back, so as to face each way, representing St. Gregory, St. Jerome, St. Augustine, and St. Ambrose; the two outer ones are original designs of dragons grappling in combat, their serrated wings extending upwards, and forming the upper surface of the carving.

The grille which encloses the choir, and shuts it out from the side aisles, is a piece of wrought ironwork, consisting of delicate scroll-work between solid uprights. The general effect is very good, but the design does not present any striking originality, and, considering that it is, of course, all wrought work and each portion worked separately, we should have expected to find more variety in the detail, which is, in fact, little more than a repetition of the same forms over and over again. It appears to us that this kind of repetition is exactly what, though inevitable in cast ironwork, we ought to escape from in wrought work. A general similarity with variation in detail is what should be aimed at in such work. The brass lectern, with buttresses surmounted by figures of the four Evangelists, is sound and solid work, but of rather the regulation "ecclesiastical brass-work" type.

The pulpit, which is of polished Hopton wood stone from the Wirksworth quarries, in Nottinghamshire, is designed with plain moulded arches and capitals in the lower portion, supporting a richly-carved upper stage, with panels in which are carved figures of Noah, Moses, Elijah, St. John the Baptist, Christ, and St. Paul. These are well executed, but the grouping of the figure of Christ in a series along with the others, and in no distinctive or prominent situation, seems a little out of keeping. The polished stone has an admirable surface and lustre, having almost the appearance of alabaster.

The Renaissance monuments from old St. Mary's Church have been preserved and set up in different situations in the choir ambulatory and elsewhere; and the principal of these, to the memory of one "Richard Robarts, of Truroe," which is placed in the centre of the north transept wall, is a fine example of a well-known type of Renaissance monument of the earlier part of the seventeenth century. It includes two reposing figures of the deceased and his wife, which were originally coloured, and the colouring has been restored from indications which remained. It is probable that the restoration represents very much what was there, but the effect is what might be called rather "gingerbread"; the different portions of the costume are realistically coloured, and it may be doubted whether such a mistake in taste as this was worth restoring and perpetuating. Over the figures is a circular-arched recess carried on coupled marble columns, the space under the arch being occupied by an inscription tablet of dark marble (the inscription cut in English, which is not usual at this date), surrounded by bold strap and scroll ornament filling up the rest of the space. This part of the work is remarkably similar to that on the same portion of the Paston monument in North Walsham Church, Norfolk, to which we referred recently; so like as to suggest the idea of its having been by the same hand, in spite of the distance in locality; but the figures are by no means equal in delicacy of execution to that at North Walsham, and the colouring makes them appear more commonplace in style, perhaps, than they really are.

A word must be added as to the organ. This has been placed in the two north-west bays of the choir triforium,—not the best place for an organ, as it is too high up, both for effect and for the practical purpose of supporting the choir; but we must admit that it is difficult to see where else it could have well been placed without interfering with the architectural effect of the building. The old position of the cathedral organ on a screen across the front of the choir was in itself a very fine and effective one architecturally, but then the old English cathedral organs were much smaller than our

* In fact, the character of the work is very similar to that of the floor of the Lateran Church at Rome, of which a cut is given in page 666 of the present issue.

great modern instruments: the whole organ could hardly be placed there now, and the division of the instrument by placing parts of it below is bad for its effect. The organ is a large one by Mr. Willis, and one of the finest of his instruments that we have ever heard; the cathedral may certainly be congratulated on the possession of it. It has at present no case beyond a mere base or corbel of woodwork. In the position in which it is placed there is scope for doing something very beautiful and effective with the case, whenever funds can be spared for this purpose.

The fittings of the cathedral, it will be perceived, are of a sumptuous character as far as they have been carried out, and if there is a little too much of the "ecclesiastical art-furniture shop" about some of them, this is not the case with all, and there seems to have been a serious endeavour to carry out this portion of the work in a manner worthy of the occasion.

As we have before said, we should have very much wished to have seen the new cathedral made an opportunity for attempting what might have been called a nineteenth-century cathedral in an architectural sense, rather than a mere repetition of the Mediæval cathedral. In the present condition of clerical leanings on such subjects, it would, we suppose, be hopeless to expect such a thing, even if the architect wished to make so difficult an experiment. If, however, it was a *sine quâ non* that we were to have a modern Mediæval cathedral, it was at least desirable that we should have as good a one as possible; and with the exception of one or two portions of the exterior of the building, to which we have referred, it may be said that this has been done, and that as far as the interior, at any rate, is concerned, Truro has a Gothic cathedral that is as good as a Mediæval one. In fact, but for the general look of new work everywhere, it would have been difficult to believe sometimes that we were not actually in a cathedral of the thirteenth century, so completely has Mr. Pearson mastered and assimilated the spirit and character of Mediæval work. In this respect he is without a rival among the architects of the day.

NOTES.

THE last number of the *Journal of Proceedings* of the Institute of Architects contains a communication signed by Mr. Cates concerning the question of the "Registration of Architects," in which it is urged that any such step as a Government Registration of Architects would probably be injurious to the character of the profession rather than otherwise, as the limits would almost necessarily have to be so wide that it would certainly take in many who, though they might pass in practical subjects sufficiently, would be no credit to the profession and no advancement to the art of architecture. How far this is likely to be the case has been already pretty well indicated in the nature and methods of the agitation about it which has been attempted by a small knot of persons who are trying to advertise themselves as reformers of the profession. Mr. Cates's suggestion on the matter (which we gather represents the feeling of the Institute Council, though it is not officially so stated) is that if it is considered desirable that the public should have some definite evidence that an architect is a competent and trustworthy member of his profession, that evidence can be most properly as well as effectually furnished by the examination for membership of the Institute of Architects; in fact, that in future, now that the passing of a by no means easy or superficial examination is a *sine quâ non* for becoming an Associate of the Institute, membership of the Institute would be in itself a testimonial of qualification as an architect. This has been our opinion all along. The machinery for an examination test is all prepared and complete, by the body which is the proper representative of the profession; and if Government intervention is thought desirable, nothing is required but that Government should officially recognise the Institute Examination.

THE meeting of the Court of Common Council, which was held on Thursday last week, was mainly occupied in a discussion of the question whether the office of City Architect should be continued, a discussion which ended in a resolution that it should be continued, and in the rescinding of the determination come to at a previous meeting to abolish the office of Architect and appoint a Surveyor only. We could not have desired a more complete endorsement of the views which we have already expressed on the subject. It was urged that it would be a great mistake for the Common Council to endeavour to "economise in brain power" which was the worst sort of economy in the present day, and that "the primary consideration with the Corporation must be to secure the services of an officer not only competent to discharge with the greatest possible efficiency the duties of the allied professions of an architect and surveyor, but who shall also be possessed of such professional and social status as to justify the Court in entrusting him with the large expenditure and numerous responsibilities which do, and must always, attach to the supervision and control of the City buildings, and the professional management (under the direction of the Court) of the Corporation property in the City." In all which we entirely concur," and congratulate the Court on their decision. It only remains to hope that a really first-class man may be appointed.

THE Government are about to do what a Parliamentary Committee recommended more than fifty years ago, viz., to publish the Acts of each Session in a portable volume at a cheap rate. But this is not sufficient. Each Act of Parliament should be published in a handy form as well as in the large size as at present, so that a person who may not desire all the Acts of each Session may be able to have one or more which are useful to him in a compact form. Thus many who might like to have the Trustee Savings Bank Act of last Session as a convenient leaflet might not wish to have the Technical Schools (Scotland) Act. We have more than once pointed out that sufficient facilities are not given to the public for obtaining Government publications in a convenient form. We hope this intention of publishing the Statutes at a low price will be followed in regard to many other publications.

IN reference to the Statutes of last session, it may be advisable to point out that a measure dealing with technical education in Scotland now forms Chapter 64 of the Session. The subjects to be taught in the technical schools must be approved from time to time by the Scotch Education Department, a School Board having previously provided the school, and having fixed the fees. In order, however, to obtain a grant from the Department of Science and Art for a subject, every school provided under the Act must be conducted, so far as the subject is concerned, in accordance with the conditions specified by that body. Yet, in respect of subjects other than these last, the school is to be conducted in accordance with the conditions of the Scotch Education Code, under the heading of "Technical Schools." This seems an absurd division. Clearly the Scotch Education Department is the proper body to have control over all the subjects, and we can see no reason why a grant from the Department of Science and Art should not be made on the application of the Scotch Education Department. But it would be far better to allow grants to the latter from the Consolidated Fund rather than from the Department of Science and Art. We do not propose to go into the further details to be found in this Act, having stated its most prominent features. It shows, at any rate, one thing, that for all practical purposes the Scotch manage their own affairs, for as their Parliamentary representatives agreed to the Bill it became law. Irish representatives, if they were as business-like as the Scotch members, would get all the Acts they wanted passed in the Parliament of Westminster, and so would England, if her representatives would think more of the business of the nation than of advertising themselves by much speaking.

FOR some time scaffolding has been up before the old houses forming the Holborn front of Staple Inn, and of course the "Anti-Scrape Society" have been wanting to know what was going on, and meddling and dictating as usual. The building is in the hands of Mr. Waterhouse, and what is being done is simply this: it is necessary to repair the upper stories (the ground floor is let as shops which will remain *in statu quo*, or mostly so), to render them habitable for tenants; and the cement on the front being very much damaged in places, had to be removed. It was then found that there was a nearly complete "post-and-pan" design under the cement. Now Mr. Waterhouse (who we believe is quite as much interested in preserving ancient work where possible as the "Anti-Scrape Society") argued that, as the cement must, at any rate, be removed and renewed, the new coat of cement would be no part of the old work, and that it would be much better not to re-cement, but to show the old woodwork underneath. In a few places the old timbers would require renewing, but the greater part of it is old work in fairly good condition, and to cement it up again merely because some other people cemented it up a good while ago, and because we have got accustomed to seeing it as a cemented front (for those are the arguments of the "Anti-Scrape Society"), would be a perfectly absurd proceeding. In our opinion Mr. Waterhouse has decided on the only course consistent with common sense. Bay windows are to be thrown out on the first floor (another sinful act, of course), but bay windows were there before; the traces of them are evident, and the reinstating of them is not a merely archæological point; it is an important addition to the comfort and cheerfulness of the rooms. The old woodwork, when it is exposed, will be oiled, the new stained and varnished, so that even in this respect there will be "no deception" whatever.

IN regard to the recent fire at Whiteley's, and the question of the influence of the expansion of the iron girders in throwing down the walls, Mr. S. Griffith writes to us from "Railway Foundry, Reading":—

"The expansion of the girders in a building when a fire occurs appears to me to occur thus:—

At the commencement of the fire the girders would expand ·000006 times their length for each degree of temperature, and this would continue until the iron became so weakened by the heat that the girders would yield to their own weight and droop, so shortening their length. I presume that we may take it that the girders would retain their rigidity until they were at least 600° of temperature, or, say, an increase of more than 500°. If this be so, the expansion would be $500 \times \cdot000006 \times$ length of girder, and assuming the length to be 80 ft., we get the total expansion to be $\cdot008 \times 80$ ft. = 3·168 in.; the movement would therefore probably be some 3 in. to 4 in. on the two walls, or 1½ in. to 2 in. on each if both were free to move.

After this the shortening action would probably commence. The power of heat is practically irresistible, and these movements would certainly occur.

I think the above will show clearly what occurred at Messrs. Whiteley's."

Of course no one doubts that the girders expanded with the heat; but there are three questions left in doubt:—1st. Is it certain, or even probable, that the series of short girders, end to end, as described to have been the construction at Whiteley's, all expanded regularly and equably, under a fire which cannot have attacked all of them from the same moment, so as just to get their maximum expansion altogether at the same moment, which is a necessary supposition so as to get our correspondent's "3·168 in."? It must be remembered that it was not a single girder, but a length of short girders abutting on each other. 2nd. Is it probable that one wall would remain rigid while the other moved? 3rd. Having regard to our first query, and that it is very

little probable that the extreme expansion of the girders was exerted all at the same moment, is it certain, or even quite probable, that a push of 2 in. or 2½ in., let us say, applied very gradually, should overthrow entirely a well-built wall? Did Mr. Griffith ever see a wall that was out of the perpendicular pushed up into its place bodily by hydraulic presses? The operation is the reverse, no doubt, of the supposed one at Whiteley's; but the success with which it has been done in several cases argues that walls are not so easily broken up by a steady push, even of much more than two or three inches.

IN the case of Bird *v.* Andrew, the Court of Appeal have recently thrown some light on the legal meaning of the words "plentiful supply of good water" to a house in a contract of sale. The judgment would seem equally to apply to a lease or any other form of demise. The house in question had a supply from an adjoining farm; that is, the well was on it. This farm was the property of another person, who had not granted an easement to the purchaser of the house. The easement was afterwards granted, but it only comprised a right to use the water in common with the owner of the farm. It might, therefore, be that the owner of the farm would, acting quite reasonably, take so much water as would leave the house-owner short of this necessary element. The Court, therefore, decided that there was not a supply sufficient to fulfil the meaning of the contract, and therefore the purchase of the estate need not be carried out. The case seems to show that a supply of water from a spring on another person's land will never be regarded as a sufficient supply unless the owner of the house has a priority in its user to all other persons.

IF Sir Spencer Wells does not succeed, even during his lifetime, in converting a great many people to cremation, it will not be for want of earnest pleading and common-sense. His recent speech before the Medico-Chirurgical Society at Nottingham was full of facts and figures which even a child could understand; and if English society was not so impregnated with sentimentality, that bane of the nineteenth century, English people would soon see how much cremation would be to their advantage. Sir Spencer shows how urban burial gave place to suburban, which is now described as highly dangerous,—many cemeteries being overcrowded and surrounded by houses,—though when they were made they were isolated in the country. During the last three months we have added to our London cemeteries no less than 476 bodies of epidemic patients,—added, it must be remembered, to ground already seething with myriads of organisms and evolving subtle effluvia to the already overladen atmosphere. Putting aside such a trifle as health for the living, it is noteworthy what expense would be saved by cremation. As there are no coffins or graves required, two items of considerable cost are at once struck out. For a humble funeral the fees are very small, and even in a good middle-class funeral, 10*l.* would cover the whole thing; and when one thinks of the small fortunes of which those harpies, the undertakers, fleece the public, by parading the word "sentiment," cremation appears to offer advantages which only want to be better known to be appreciated.

THE reported state of the Rochdale Town-hall, which was only built about twenty years ago, shows how necessary it is not only to design work well, but to see that it is carried out well. It appears that the building has been surveyed, and that it requires immediate re-roofing, besides other repairs which should not have been necessary at this date. At a recent meeting of the Town Council, one of the Councillors stated that the contractor formerly employed on the building had admitted to him that he "scamped" the work systematically. But, if so, why did neither architect nor clerk of works find him out? The result seems to argue a great want of proper supervision during the construction of the building. The Town-hall was erected from the designs of Mr. W. H. Crossland, architect. A view and plan of the building, with description, will be found in the *Builder* for November 24, 1866; and a view of the interior of the hall was published by us in our number for February 12, 1876.

MR. S. LEE BAPTY, the present Manager of the Manchester Exhibition, has been appointed Commissioner-General for the British Empire Section of the Belgian International Exhibition, which is to be held at Brussels from May to October, 1888. In the list of classes of exhibits it does not appear that the higher branches of the Fine Arts are included; at least, the only direct mention of art is in the heading "Decorative Art," which, as generally used in this country, does not include high-class sculpture and painting. It would be well that this point should be made clear. Among the classes of exhibits in the list which may be of interest to our readers are "Scientific Instruments," "Furniture," "Ornamental Metal Work," "Heating and Ventilation," "Lighting," "Mining," "Metallurgy," "Machinery and Machine Tools," &c.

THE two new pictures by Sir John Millais at Mr. McLean's Gallery, though entitled "Il Penseroso" and "L'Allegro," are not allegorical figures of Pensiveness and Mirth, but portraits, or so we may presume, of young ladies in modern costume. The titles should have been "La Penserosa" and "L'Allegra"; the titles of Milton's two poems, which are adopted here, refer, of course, to the men who are supposed to be the speakers, not to the nymphs who are invoked. "La Penserosa," then (for we prefer to be grammatical), is a portrait of a noble-looking young woman, a brunette, in a dark dress, with a thoughtful expression of countenance, framed in a scene where a mass of foliage on one side, and rather faint indications of distance and sky behind, are blended with the figure into a most delicate harmony of colour, illustrating how much art there is in Sir John Millais's making up of backgrounds for his figures, even when the work seems very slight. One sad defect, however, mars the picture; the waist of the figure is painfully contracted. It is almost impossible that it could have been so in his model, for no young woman could have such a general look of healthy physique with such a waist as that. If it were so, as an abnormal phenomenon, the painter had surely better have corrected it; as it is, it is a blot on a beautiful work, and will be so generally felt to be so that we suspect this portion of the work will have to be ultimately repainted. "L'Allegra" is a brilliant and strong painting of a blonde young woman, with her back nearly to the spectator, and her face turned so as to show in profile. The flesh is painted with great delicacy. The rest of the picture is rather *criarde*, a confusion of bright points and frippery. Between these hangs a grand painting of the head and chest of a lioness, by Mdlle. Rosa Bonheur, remarkable for breadth of style, truth of texture, and the expression of immense muscular power conveyed in it,—a wonderful piece of work for a woman to have produced. Among the other paintings in the same gallery is a remarkably good example of Miss Clara Montalba's work (46), "Amsterdam," a painting of powerful effect, and less mannered than many of hers that we have seen; and a very sweet little figure by Mr. Fildes, entitled "An English Maiden" (63). Some landscapes by Neubert have a certain picturesqueness of composition, but are very hard and mannered in execution.

WE cannot say that the winter exhibition at Messrs. Tooth & Son's Gallery is a very interesting one. It contains, however, a beautiful work by Mr. H. W. B. Davis "On the Coast of Bretagne" (51), an effective Cairo scene by Mr. Logsdail" (25), totally destitute, however, of artistic finish or refinement; and some good smaller works, especially two small Venetian pictures by M. Gallegos (113 and 120), on either side of a picture by M. Lhermitte, "Toil and Thrift" (117), which should be looked at, though we do not consider M. Lhermitte by any means as great a master in colour as in black and white. The central picture of the collection, "A Court Matinée" (91), by M. Barbudos, an interior crowded with figures, is supremely clever in the brilliant painting of glittering dresses and details and in the amount of character in the faces of the fashionable mob; but it is disagreeable and staring in colour, and almost revoltingly cynical in feeling. There is a good landscape by Mr. Keeley Halswelle (95), in which he may be congratulated on at last having got a new sky in exchange for his old steely-grey one; another good little Venice picture by M. Senèt (99), and one or two figure pictures by M. de Blaas, very good work, but only of moderate interest.

WE have been sent an interesting little paper* on the process of mezzotint engraving, read by Mr. Wilfrid Ball at the little literary and archæological society which meets under the title of the "Sette of Odde Volumes." It gives a brief account of the process, and the principal difficulties attendant upon it, with an *In memoriam* note at the end on the recent death of "one of the most promising workers in pure mezzotint," the late Mr. C. W. Campbell. Mr. Ball complains that Watt, the inventor of the steam-engine, caused indirectly the decline of mezzotint in England, by suggesting the use of steel instead of copper for engravers. As soon as it became known that 1,000 impressions could be taken from a steel plate, while only eighty could be taken from a copper plate, the latter were driven out of the market, and the depth of tone obtainable from copper gave way to comparative crudity when steel was employed. We have no doubt, however, that Watt thought he was doing the world a service in introducing steel. It is not given to engineers to comprehend these things.

ROYAL INSTITUTE OF BRITISH ARCHITECTS:

THE PRESIDENT'S ADDRESS.

THE first meeting of this Institute for the present Session was held on Monday evening last, Mr. Edward I'Anson, F.G.S. (President), in the chair.

The Secretary (Mr. W. H. White) announced a large number of donations to the library, specially mentioning a sketch-book which had belonged to the late Mr. George Devey, and was now presented by the executors.

The ballot for new members was next taken, when the following gentlemen were elected, viz.:—

As Fellows.—Mr. J. C. Maddison, of Christchurch, Canterbury, N.Z.; Mr. W. H. Powell (Associate), Southampton-street, Bloomsbury; Mr. J. Jerman (Associate), Paul-street, Exeter; Mr. T. M. Lockwood, Foregate-street, Chester; and Mr. A. Hill (Associate), Georges-street, Cork.

As Associates.—Mr. H. T. Gradon, Saddler-street, Durham; Mr. R. M. D. Fell, Bernard-street, Russell-square; Mr. H. H. Fox, H.M. Indian Public Works Department, Burmah; Mr. G. C. Smith, Gosforth, Newcastle-on-Tyne; Mr. C. J. Marshall, Ebury-street, S.W.; Mr. E. H. Selby, Craven-street, Charing Cross; Mr. W. H. White, Lawford-road, Camden-road; Mr. R. Williams, Holly Bank, Haslemere; Mr. E. J. Bennet, Harmer-street, Gravesend; Mr. J. W. Brooker, Railway Approach, London Bridge; Mr. H. R. Lloyd, Moseley, Birmingham; Mr. F. W. Marks, Harrington-gardens; Mr. J. W. Stonhold, Stanhope-street, Regent's Park; Mr. H. A. Gregg, St. Helen's-place, E.C.; Mr. F. E. L. Harris, Lawford-road, Camden-road; Mr. A. H. Worsley, Stanhope-street, Regent's Park; Mr. T. Moore, Whip's Cross, Walthamstow; and Mr. H. L. Paterson, Wilberforce-road, Finsbury Park.

As Hon. Associate.—Sir John Coode, K.C.M.G., Westminster-chambers, Victoria-street.

Mr. Ralph Nevill, while the ballot was proceeding, called attention to the lighting of the library after dark. It was effected by means of argand burners, which, he said, experience had shown were perhaps the greatest consumers of gas and givers-out of heat and bad products of any forms of lighting. Failing the electric light, he suggested the adoption of the Welsbach

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* Published by R. Dunthorne.

light, which was economical, and threw out little heat or noxious products.

The President said that if Mr. Nevill would write to the Secretaries the question would receive due consideration.

The President next delivered the opening address of the session, which we print nearly *in extenso*. Mr. I'Anson said,—

Gentlemen,—Entering as we now are on another session, and looking back, as is the custom, on the work of the past, I cannot refrain from alluding to the fact that we are passing through, in one great respect, an exceptional year,—the year of the Queen's Jubilee, which has brought to this capital so many of our fellow subjects from all parts of the empire, and also so many illustrious and distinguished visitors, who came to share and enhance our rejoicings.

One of the outcomes of this memorable Jubilee has been the foundation of an Imperial Institute, and the commencement of a new and great building, designed by one of our Fellows, Mr. Collcutt (applause), and obtained by him in a competition limited to a few members of the architectural profession. For the purpose of founding and erecting this Imperial Institute subscriptions have been solicited, and in many cases the invitation has been liberally responded to. We amongst others were invited to take our part in the foundation, but unfortunately architects sadly lack the power to afford that material assistance which their feelings naturally prompt them to give. The larger number of the members of this body who are in a position to subscribe are members of other bodies which have contributed to that fund, and they cannot be expected to send double subscriptions; while, in our corporate capacity, the sum we might be prepared to send, even if we had the power under our constitution,—which I doubt,—would be relatively so small that we could hardly venture to offer it (hear, hear). Nevertheless, I am afraid that this enforced abstention has been detrimental to architecture, for we live in an age when the *do ut des* of diplomacy, and the *quid pro quo* of commerce, are often too rigorously exacted. In the composition of the Executive Council for the Imperial Institute, the representation of architecture is, I regret to say, conspicuously absent, unless, indeed, it is considered that Sir Frederic Leighton, as the President of the Royal Academy, represents Architecture as well as Painting and Sculpture. We are, however, none the less loyal to the principles involved in the foundation and objects of the Imperial Institute; it is only that our pecuniary resources are inadequate,—disproportioned to our good will,—and, this being once understood by the authorities concerned, we may rest quietly assured that a fuller representation of Architecture than now exists on their Council will be deemed not only wise, but essential.

Whilst on this subject, it occurs to me to remark that one most fitting work for the Imperial Institute would be the production of a thorough and complete record,—perfect in all its details,—of the more important architectural monuments contained in India, and the many historical sites and ruined cities to be found within the various dependencies of Great Britain and Ireland. This, no doubt, has already been accomplished to a slight extent by private enterprise and liberality, but there is no complete or national work of the kind; and I venture to hope that there may soon be found means, by the agency of the new Imperial Institute, to furnish the world with at least a catalogue of the Historical Monuments extant within the confines of the British Empire (applause).

In the remarks just made, I have spoken with full cognisance of the responsible position I hold, and I have now to add that, as your President, I have recently fulfilled the sad duty of attending the funeral of the late Mr. Beresford-Hope, one of the most eminent of my predecessors in this chair (applause). Among other professional men who accompanied me on this mournful occasion were Mr. Brooks, Mr. Carpenter, and Mr. Cates. The funeral service was solemnised in Kilndown Church, which, with St. Augustine's College at Canterbury and Ely Cathedral, forms one of the chief memorials of his munificence. Although not a member of the profession, Mr. Beresford-Hope always took a lively interest in the promotion of Architecture, and whether in his place in Parliament, or when engaged in the many other duties he undertook, was ever ready to assist professional architects by his counsel and active support. He was an enthusiastic and a staunch admirer of the works of the Middle Ages in England; and with the movement known as the Gothic Revival his name will always be associated. As President of this Body, President of the Architectural Museum, and, at an earlier period, as President of the Cambridge Camden Society (afterwards called the Ecclesiological Society), he will be remembered among us and our successors. But this is not the time to do more than refer generally to his varied artistic and literary occupations, and to his numerous contributions to the cause of art. His death is a loss to the Institute, both as regards the brilliant *Review* of which he was the proprietor, and as regards the House of Commons, in which his authority on architectural questions was undeniable.

Mr. Beresford Hope was the only Honorary Fellow who, since the death of the first President, Earl de Grey, K.G., has occupied the chair of the Institute, and it is, I believe, a source of satisfaction to many members that, by the terms of the Supplemental Charter granted to the Institute in the Spring of the current year, Honorary Fellows are still eligible for election as President. It is also agreeable to reflect that, in asking for fresh powers and privileges,—some of which involved the repeal of the larger portion of the original Charter,—we have been permitted to retain any benefits accruing from the relative antiquity of our incorporation. What are these new powers, these new privileges? I doubt, gentlemen, whether you have quite realised the character of them, and so, with your permission, I will recapitulate their principal points. We humbly asked, taking into consideration the importance of this body and the necessity of maintaining a high standard of architectural knowledge in the country, for power to hold Examinations and to grant certificates or diplomas in connexion therewith; and we have obtained the right to hold and establish Examinations not only within the United Kingdom, but also in any Colony or dependency thereof, and in India. We have obtained the right to use distinguishing affixes; and also power to declare, in the year 1892, that every person desiring to be admitted a Fellow must have passed an Examination. In five years' time we shall have the right to say to outsiders, who may wish to become Fellows,—"You shall not enter the corporation of British Architects except through the ranks of the Associate class"; or we may say,—"You shall not enter the ranks of the Fellows until you have passed a special Examination." Moreover, the Examination test which we ventured, in 1882, to impose upon all candidates for the Associateship is now a right which we are empowered to exercise. These, in my opinion, are powers and privileges the possession of which entails responsibility of a very high character towards the public and towards ourselves; and they form a basis upon which all minor professional questions must rest, if any superstructure is to rise out of them. As for the changes in the constitution of our internal affairs, they are equally important in their character, but to ourselves principally. The property of the Institute, which was originally vested solely and absolutely in the Class of Fellows, is to be vested in the corporate body; the Associates, who by the original Charter could not vote or interfere in the affairs of the Institute, will have the right, with certain exceptions, to vote at the general meetings. The Honorary Associates, who by the original Charter did not exist, are recognised, and will have the right, with certain exceptions and under other limitations, to vote at the general meetings. Moreover, the mode of voting and the number of votes which shall form an effective majority at such meetings are to be decided by By-laws. All these modifications and developments of our original powers and privileges have been obtained not without some difficulty,—not without even some division amongst ourselves,—but I think that we may congratulate the Institute upon the result; nor must we forget the warm and efficient support we obtained in this matter from the non-Metropolitan societies, who shared in our discussions on the subject, and loyally assisted us throughout (applause).

The triennial Conference* held in May brought us into most agreeable contact with our provincial brethren; indeed, it is a gratifying fact that,—owing to the importance of the questions affecting our profession with which we have lately had to deal,—we have been so frequently in close relationship with them; and it is in the highest degree satisfactory to find that, whatever our individual opinions may be on these subjects, when we are brought closely together we act better, understand each other better, and promote better what we may mutually feel to be for the best interests of the important profession to which we belong.

One meeting was profitably occupied in considering the subject of professional education, introduced by an important contribution from the Rev. Professor Babcock, of Cornell University, New York State; and amongst the valuable papers which followed was one by Mr. Lawrence Booth, then President of the Manchester Architectural Association. This gentleman, a Fellow of our body, attempted to show how the authority and usefulness of the Institute could be increased by the adoption of an educational scheme which, if successful in its working, would within a few years lay a solid foundation whereon an appeal to Parliament might be based for stringent powers of repression against unqualified practitioners of architecture. Other papers,—including one by Mr. J. A. Gotch, who was then the President of the Architectural Association,—offered suggestions of like importance, and the whole resulted in a series of resolutions being adopted by the meeting, embodying a practical scheme for organising a complete system of progressive Examinations. These resolutions were:—

"1. That it is desirable that the guidance and direction of the education of those entering the architectural profession should be undertaken by the Royal Institute of British Architects.

2. That to realise this end the Royal Institute of British Architects should prepare a scheme of a complete system of Examination.

3. That such system should comprise 1st, *Preliminary Examination* for pupils entering the profession as a test of general knowledge, those passing this to be Probationers R.I.B.A.; 2nd, *Intermediate Examination* for pupils in their third year or earlier, for the general principles of art and construction, those passing this to be students R.I.B.A.; 3rd, *Final and Pass Examination* to qualify for A.R.I.B.A., at twenty-three years of age or earlier; and that no subscription be required from Probationers or from Students.

4. That this system should be arranged with the co-operation of the local societies by whose agency the details of the Examinations could be carried out."

At that meeting, Liverpool, Birmingham, Leeds, Bristol, Glasgow, and Dublin were represented, and your Council, feeling that suggestions from so representative a gathering should be duly respected, referred the resolutions to the special Education Committee, for the purpose of considering the manner in which they should be realised.

There are, possibly, difficulties as yet unforeseen, which may impede the carrying out of any complete scheme, but the idea expressed in these resolutions is so good, and so likely to benefit the profession, that I do not hesitate to enlarge upon it. The new Charter having conferred on the Institute the power to hold Examinations, and ultimately to make such Examinations the only means of entrance, it is most desirable that immediately on a young man entering the profession he should be started in a course of study which will ultimately lead him up to the desired end.

The *Preliminary* Examination will test the general knowledge and lead schoolmasters to systematise the studies of the pupil and to direct his attention in particular to those essential branches of knowledge which the Examination will indicate.

The *Intermediate* will be for the probationer, a stage at which he will test his elementary architectural knowledge, and in the preparation of which he will lay a solid foundation for his future studies.

The *Final* will give him a standard for the development of his studies so as to place him in a position to enter on the active practice of his profession, ready to apply the principles and details he has acquired, and to further pursue his work until fully prepared to enter on that ultimate Examination which in a few years may be established as a preliminary qualification for the Fellowship.

I hope that when the scheme thus set forth is matured, it may formulate such modes of procedure as may lead to our entrusting the preliminary Examinations to local societies in the manner so well indicated in the paper I have mentioned by Mr. Lawrence Booth. Meanwhile, in the Spring of 1888, an Examination will be held under the auspices of the Manchester Architectural Society, this centre

* Full reports of the papers and discussions were given in special Supplements to the *Builder* at the time.

having been selected as likely to be convenient to candidates from the great towns in the vicinity, and even to those who may come from further north, and from Scotland. The Examination will be conducted on the same lines as those to be held in London this month and in March. The Chairman of the London Board of Examiners will probably attend, and, as at former provincial Examinations, assist the Board, selected by the local society, but composed entirely of Fellows of the Institute. In thus endeavouring to bring Examination closer home to non-metropolitan architects and students, the Institute is, I am sure you will feel, studying the best interests of the profession, and doing much to weld the whole profession into one united body.

It has been sought, moreover, to direct the attention of young architects in practice to the Obligatory Examination, which now forms the only entrance to the degree of Associate of this Institute. The number of such architects who would be worthy members of this body, but who have not yet joined its ranks, will, I am convinced, continue to increase, because undoubtedly the preparation for and passing through the Examination, respecting the advantages of which those architects who have passed express themselves warmly, are considerable; and it cannot be too widely known that this Examination is framed so as to have regard to the position of architects in actual practice. Indeed, I know that the Examiners are in the habit of giving the fullest consideration to the professional status of such candidates. I therefore most cordially invite all those younger members of our profession who, though not Fellows or Associates of the Institute, are already in practice, to prepare for Examination, and thus qualify themselves for admission into our ranks.

To another of the meetings of the General Conference your Council referred the report of the special Federation Committee, in order to elicit an opinion as to the feasibility or desirability of carrying into effect any or all of the proposals made in that report. The meeting was a thoroughly representative one, and the report was returned, after a few slight modifications, with a request that it might be taken into consideration. This has been partly done, and the matter is now in the hands of a special committee engaged in the preparation of draft by-laws according to the terms of the Supplemental Charter granted to the Institute in the Spring of the current year; and I have every reason to believe that before many weeks are over it will be possible to convene a special general meeting for the purpose of considering the same. Meanwhile, without pledging myself to agree with all the provisions of the report, I may perhaps be allowed to express satisfaction with their general tenor. The Conference of 1887 has resolved that the centre of any federation of the members of the profession within the Empire is and shall be the Royal Institute of British Architects, and the expressed object in view is to establish a closer connexion than now exists between British architects generally, so as to promote the advancement of our art, harmony of practice, and intercommunication. For this purpose, roughly speaking, the Institute is to organise periodical conferences in the provinces as well as in London; the local societies, which are to retain their identity and name, and the management of their internal affairs, are to adopt the "Schedule of Professional Practice and Charges" sanctioned by the Institute, with a proviso that, so far as may not be inconsistent with the spirit of such Schedule, they may arrange terms for the guidance of their own members in circumstances not covered by the Schedule; they are also to afford every practicable assistance to students in preparing for the Examination in Architecture; and, further, local examinations are to be held by a society or group of societies, of persons desirous of qualifying for candidature as Associates of the Institute. In return, the Institute is to hand over to the local societies a proportion of the amount received by the Institute in annual subscriptions from their members. These are the main points of the report of our special Federation Committee, and they seem to me, as they seemed to the Conference meeting which discussed them, quite feasible,—indeed, eminently desirable. There are, of course, details, especially of professional practice, which will require care and time to work out and assimilate; but I trust that both in London and in the Provinces the leading men will exercise mutual forbearance while completing the minor arrangements of a scheme likely to benefit the whole profession, and to the success of which I wish a hearty God-speed.

The consideration of a very important subject,—the proposed "Registration" of architects,—also took place at the Conference, when, after a lengthy discussion, it was resolved to recommend this question to the careful consideration of your Council. The matter is now before a special committee, composed of members whose names are given in the Kalendar just issued, and who are fairly representative of both town and country. Mr. Connon, of Leeds, has accepted the post of Hon. Secretary to the Committee; and those who know the energy and ability of that gentleman will not fail to conclude that the work will not be allowed to flag.

Gentlemen, this is a very important question. It has been strongly pressed upon us from without. It is also clear that many amongst us think it a right step to take. But the critics will ask,—Is it for the good of the public? Is this movement a disinterested one (hear, hear) or is it not? Is it to make a trade-union of the profession (No, no),—to exclude all those who have not been admitted within the inner circle from sharing in the emoluments of those who are within? Will it really protect and guard the public from incompetent men? ("Yes" and "No"). For my part, before venturing upon any conclusion as to the desirability or the reverse of "Registration,"—whatever that term may imply,—I think that we may ask ourselves two very apt and pertinent questions:—First, as to the form in which the registration of architects may be best effected; and, secondly, whether the fact of having passed those Examinations for admission to the Institute, now sanctioned by Royal Charter, and to which I have just referred, will not accomplish,—to all intents and purposes, and sufficient for the present time,—the main object of registration as contemplated by the Conference of May last (loud applause).

Considering that the Institute has now been established for more than fifty years, the passing away of those who in their youth and vigour were among the earliest members of the body must be looked for, and indeed is inevitable. The first of our losses during the past session is that of Mr. George Devey, a Fellow since 1856, who of late years was but little amongst us; he was an able artist in every way, an accomplished architect, and those who knew him personally speak of him as kindly and fascinating in his manners (hear, hear). George Vulliamy, a past Vice-President, who was well known to all of us, was a man of courteous and obliging manner, which engaged our cordial esteem. A devoted lover of art, he delighted in discoursing on the great works of the Renaissance. He was, however, comparatively early in life, appointed to the honourable and responsible position of Superintending Architect to the Metropolitan Board of Works, and he had little opportunity of doing any purely architectural work. George Bell, Fellow, of Glasgow, J. R. Botham, Fellow, of Birmingham, and Thomas Henry Sapsford, City Architect at Sydney, are also among our losses; the latter gentleman's decease was announced at the meeting following his election. The next to mention is Sir Horace Jones, and I think I may emphatically say no one was on more friendly terms with the vast majority of the members, or better known amongst us, than he, for he was a truly genial and kindly man (applause); his active career has so recently closed,—the man and his works are so well remembered,—that it is unnecessary for me to enlarge on his personal qualities, or his ability as a professional man. I knew him from the commencement of his professional career, when he went to the same office in the City as I for a time did; and I observe in a memoir of him that he esteemed his position here as your President, as I do, as the crowning honour of his life (applause). Ambrose Poynter, one of the Founders of this Institute, and in the earliest years a very active member, was joint Honorary Secretary, and contributed several Papers to the "Transactions" between the years 1839 and 1848; he had a considerable professional practice many years ago, and his name is worthily continued in the person of his son, Mr. E. J. Poynter, a distinguished Painter and Royal Academician. Robert Parris, Fellow, a member of the firm of Wiltshire & Parris, was a gentleman who practised honourably and successfully as an architect and surveyor in Lambeth; the firm of which he was a member was originally styled Bailey & Wiltshire, and it was to that office, I believe, the late Sir Charles Barry was apprenticed. George Barnes Williams, Fellow, was the successor to Mr. George Smith, whose architectural practice in the early part of this century was very extensive, and who also had a large business as a surveyor, which class of business was, in my early professional recollections, so almost entirely in the hands of George Smith, David Riddel Roper, James White Higgins, and my late father, that I recollect our much valued Fellow, Mr. George Pownall (who, with Sir Henry Arthur Hunt, is amongst the few of my early contemporaries now living), observing to me, we being then young and ardent aspirants for professional work, that until these men had passed away there could be no work for us (laughter). Mr. Williams was Mr. George Smith's assistant, and succeeded to the Surveyorship of the Mercers' Company, to that of the Morden College Estates, and of others. His principal architectural work, in my recollection, is the rebuilding of the Mercers' Hall, and he also restored the hall of the Vintners' Company. George Goldie, Associate, whose practice was chiefly in ecclesiastical buildings,—his principal works being the Pro-Cathedral at Kensington, and the Church of St. John of Jerusalem in Great Ormond-street,—was an architect of talent, well known and justly much appreciated (hear, hear). Among the Associates I regret to have to mention the loss of Oswald Adshead, Thomas Farrer, Harry Saxon Snell, Robert A. Frazer, Andrew Edwards, and Vincent Wing; also J. Stanning Edmeston and Arthur Harland, whose deaths at an early age have just occurred; and among the Hon. Associates that of Major-General Moody, late of the Royal Engineers. In Messrs. Ruprich-Robert and Olivier Rayet, the world of art and archæology has lost much, and Professor von Neureuther, another Hon. Corresponding Member, and an architect of distinction, who resided at Munich, is also deceased.

Amongst the events which have occurred since I last had the honour of addressing you is the election of our esteemed Fellow, Mr. Blashill (applause) to the post of Superintending Architect to the Metropolitan Board of Works, which is a position of much importance. When it is considered that the formation of new streets; the compensation to be paid on the removal of buildings necessary for the formation of these streets; the checking and examination of the returns of the District Surveyors, which are made every month; the sometimes difficult task of regulating new lines of frontage, and advising the Board generally on all building questions arising out of the Building Acts, affecting the interests of some four millions of people, devolve upon this functionary,—you will admit that it is no light or irresponsible work which is placed in the hands of the Superintending Architect. Another noteworthy and to us most interesting event, which has only just been announced, is that the Corporation of the City of London, after having decided to elect a Surveyor to carry on part of the work so ably conducted by our late Past-President, Sir Horace Jones,—a decision which from the first was, I believe, by many members of the Corporation, considered a retrograde movement,—have reconsidered the matter, and have felt it desirable not to depart from the ancient custom of placing an architect on the list of their high officials (applause). They thus recognise, it seems to me, the dignity of our profession, and the strength which the old and powerful Corporation of the City of London feel is thus added to their administrative power by the existence of such an officer (applause). Appointments of this kind are amongst the few advantages incident to our profession; they are posts of high honour, and although the emoluments are not perhaps equal to those which exist in the higher branches of the legal profession, they cannot be said to be other than liberal. Indeed, the office is such as any amongst us might be proud to hold; and I recollect when Mr. Bunning was elected, that Sir William Tite, who was afterwards one of our most distinguished, and certainly one of our most able, Presidents, was a candidate for the post (hear, hear).

It has been my most pleasing privilege to place in the hands of our respected Past-Pre-

sident, Mr. Ewan Christian, the Royal Gold Medal; and looking to the importance of some of Mr. Christian's very numerous works, the conscientious care with which he has dealt with those to us most precious national monuments which we have inherited, with which he has to deal,—these considerations, together with the universal esteem and respect in which he is held, induced us to recommend him to Her Majesty as a fit recipient of this honour.

The Exhibition of the Students' work, held in the Conduit-street Galleries last January, was one of the best, if not the best, we have ever had. There can be no doubt whatever that the number of young men who can now produce sketches and measured drawings of the highest quality, both as regards accuracy and artistic power, has largely increased.

The Committee of the new British School at Athens, who report that there is every cause for satisfaction in the progress already made, and that it is intended to provide board and lodging at a moderate rate in the school building for a limited number of students, have just made a proposal to us of some importance and interest. They are prepared to contribute the sum of 50*l.* towards the expenses of any duly qualified architectural student whom your Council may select to send out to Athens during the session now opened (applause). The conditions attached to the grant are,—(1) That the said student shall reside at least four months in Greece; (2) That he shall hold himself at the disposal of the Director of the school to assist in excavations if required (laughter).

I am glad to be able to remind you that the Institute now fosters to the best of its ability the Architects' Benevolent Society, which is administered partly under our care, and within this building. It has an accumulated fund of over 7,000*l.*, which, considering the long time the Society has been established, is but a moderate, I ought rather to say, a very small capital. I fear it must be taken as another illustration of the fact that architects' coffers are not as a rule overflowing with riches. It was proposed to endeavour to increase the fund in the truly British fashion of dining together, and thereby stimulating the charitable sentiments which we all entertain at heart, especially in a cause in which we are so closely interested as the relief of distressed brethren, their widows and orphans. Through the kindness of our Fellow, Mr. Banister Fletcher, one of the Court of the Carpenters' Company, it was hoped that this suggested dinner might take place,—and at Carpenters' Hall, which would have been gladly lent,—but at present it has been found impracticable to make any definite arrangements for the purpose.

There is another subject I cannot leave unnoticed,—that is the issue of a further volume of the "Dictionary of Architecture." It is most gratifying to see this work progressing so satisfactorily, as regards the matter it contains. But when will it be completed? Some of us who saw its commencement may not live to see its completion. Nevertheless, let us help as best we may towards this much-to-be-desired result. If, after all, it is too ambitious a work for this Institute, or any Committee of the Institute, to have taken in hand, what honour, what gratitude is due to the devoted few who, as a labour, and a very heavy labour, too,—of love, are bringing this important work to an end! I need but point to the volume just issued to induce you to examine it carefully. I am told by those who know most about the Institute library that very few books in it are more often consulted than the "Dictionary of Architecture," by foreign as well as home readers, and none, I am convinced, afford more information on matters of fact than does this durable monument of Mr. Wyatt Papworth's learning and research.*

Nothing that has transpired during the past year has induced a belief that the Institute may be brought more closely into relationship with the Royal Academy. Although, in the early part of the year, it was stated that proposals involving serious modifications in the constitution of that body were being considered by its members, no communication on the subject has been received, and any action that may have been taken by the Academy has been without results as regards ourselves.

On the other hand, an arrangement of some significance has been made between the Architectural Association and the Institute (applause). Before separating for the recess we received a communication from the Committee of the junior body, asking for permission to use our rooms for their ordinary Friday evening meetings, as, in consequence of the present number of classes and an increase of work generally, the Association found the accommodation at their disposal too limited. Since then, your Council, having left the matter to be settled by the Secretaries of the Institute and a small Sub-Committee of the Association, have willingly consented to an arrangement whereby, during this session, our meeting-room will be occupied once a fortnight by the Association, and, I have every reason to believe, with the entire concurrence of the members of both bodies (applause). It is a source of extreme gratification to me to know that the mutual assistance long rendered is thus appreciated by both Societies in a manner so cordial, and, as the excellent President of the Architectural Association showed, in his recent Address delivered from this chair,* so sincere. The aims of both are identical; we exist for a like purpose. In the Supplemental Charter and its Examination clauses, the objects for which both are working have been defined. The Institute, while urging the members of the younger Society to maintain their absolute independence, will, in my opinion, further the interests of the profession by endeavouring to enlarge the capacities of the Architectural Association as an educational body (applause).

And now, gentlemen, having reviewed the prominent events of the period which has passed since I first had the honour to read a Presidential Address to you,—and this is the last time it will be my privilege to do so,—I commend to your attention some of the important questions which will come before you this session, namely, the settling of the By-laws to be made under our Supplemental Charter; the development of our scheme of Federation; and the consideration of the very important subject of "Registration" (hear, hear). There is also a very difficult and certainly important subject,—initiated here some years ago,—on which we have gathered the opinion of some of our most able and experienced members. I refer to the vexed question of "Light and Air." I have not ventured, although much engaged with the subject, to give an opinion on it myself, but I know that a mass of evidence has been collected by a special Committee of the Institute, the work of which has been transferred to the Standing Committee for Science,—work which well merits further consideration, with a view to the framing of some practical suggestions in regard to this matter.

Gentlemen, a great deal has been written and said of late about the progress of the last fifty years. To many of you I have no doubt that such a period seems a long time, but, believe me, it is barely anything at all in the life of a corporation; and to every one, whether he be an old man or a young man, I would say,—Do not be in a hurry. It was only last year that the London Colleges of Physicians and of Surgeons combined for educational purposes, and for the furtherance of professional education; yet the College of Physicians was founded early in the sixteenth century, and the surgeons can trace their existence back to the reign of Edward II., and even earlier. The position of the English surgeons is now as eminent as that of any other of the learned or scientific professions; but less than a hundred years ago, in 1790, one of the Masters of the College of Surgeons, on retiring from office, wrote to his subordinates an extraordinary letter. "Your theatre," said he, "is without lectures; your library room, without books, is converted into an office for your clerk; and your committee-room has become an eating parlour." Again, in 1844, only forty-three years ago, a Charter granted to the Surgeons constituted a new order of Fellows,—a grade higher than members,—who were to qualify for the distinction by strict examination, or by selection from among deserving members. It is unnecessary to tell you the results of that great step; you will draw your own inferences from the parallel I have ventured to place before you. No class of men have been reviled, even for centuries, with more bitterness, and with more wit, than the physicians and surgeons. They have been assailed with clamour inside and outside their ranks; they have met with every kind of opposition. Such things, however, do no harm, for, when the cause is good, opposition to it creates no new enemies; on the contrary, it consolidates old friendships, brings back waverers, and strengthens the ties of interest and duty which unite the members of a sound and flourishing Society like that to which you, gentlemen, and I have the advantage to belong (applause).

Mr. A. W. Blomfield, M.A., Vice-President, said,—In the interesting and exhaustive address to which we have just listened, you made a suggestion to which I should like to give practical effect at once, by proposing that a vote of condolence be passed with the family of our former distinguished President, Mr. Beresford Hope, and that our Secretary be instructed to convey it in the usual manner to the proper quarter (hear, hear).

Mr. Ewan Christian seconded the motion, which was carried.

Mr. Blomfield.—It now becomes my pleasing duty to propose a vote of thanks to the President for the very interesting address to which we have just listened. As far as I can judge he has touched upon every point of interest that might have been expected to be alluded to in an address of the kind. I am sure you will all feel with me considerable regret that this is the last time we shall have the pleasure of hearing such an address from him from the Presidential chair. I think, gentlemen, it is hardly necessary for me formally to propose a vote of thanks to the President for his address, for I am sure it will be carried by acclamation (applause).

Mr. John Slater, B.A.—Gentlemen, as representing the Architectural Association, I have been requested to-night to second the vote of thanks to the President of this Institute, which has been proposed by Mr. Blomfield. I esteem it an honour to the Architectural Association, as it is a personal honour to myself, to have had this duty placed in my hands. You, Sir, have alluded to the new arrangement which has been made between this Institute and the Architectural Association, with regard to the use of this room by the younger body, and I am glad to take this opportunity to thank you, and the members of the Institute, for the cordial and ready manner in which they acceded to our request. The gain on our part is undoubted. We shall be very much more comfortable in this room than in the room downstairs, where we were both hot and stuffy. However, I hope the advantage may not be entirely one-sided. A wish was thrown out a fortnight ago that some of the exuberant vitality of the younger body, some of the enthusiasm with which its meetings are conducted, might permeate these walls, and be reproduced at the meetings of the Institute. Whether this be so or not, whether it be wanted or not,—for I am not quite sure that there have not been meetings of the Institute during the past two or three years at which there has been no lack of exuberance or enthusiasm,—I think that anything which makes this Institute and this room the recognised centre of the architectural life and work of the day, whether as regards the metropolis or the provinces, must be an undoubted good (applause). So, Sir, while thoroughly appreciating and strongly advocating a close connexion of this kind between the two bodies, I am very pleased indeed to find you approving and endorsing the views which I put forward as to the work which has to be done, with reference to the profession, being better done by the two bodies independently and under separate executives (applause). To use an illustration from chemistry, I cannot help thinking that the mutual reactions between two independent bodies will prevent the stagnation which would certainly ensue from a complete amalgamation. You have alluded to the probable extension and furtherance of the excellent scheme of Examination. I cannot help thinking it a striking feature of the times that, so far as I am aware, this proposal of extending the Examinations is not met, and is not likely to meet, with anything like the same amount of opposition with which the original institution of the Obligatory Examination was received. I think, Sir, that is most encourag-

* We quite concur with the President that there is a mine of information of a certain kind in the "Dictionary," but we must repeat, and with emphasis, that there are articles in it which are utterly unworthy of such a dictionary, either from being out of date in information or scientifically inaccurate in their statements and their literary expression; and we think it is much to be regretted that the President should have publicly given the sanction and approval of the Institute to a dictionary which contains articles that would render it a subject of ridicule to any scientific man or sanitary engineer who took it up.—Ed.

* Printed in the *Builder* for October 29 last.

ing. I believe nearly every one is beginning to feel that Examinations, if properly conducted,—and I would like to underline these words as strongly as I can,—that Examinations, if properly conducted, are invaluable in fostering and improving architectural education. And that is the sole reason for the existence of the Examination at all. The Examination here must certainly not be framed on any rigid lines. It must not be an Examination the passing of which by students will be dependent upon those students uttering the shibboleth of this or that examiner. They must be widely framed, giving free scope to individual genius,—if you like, to individual eccentricity,—but they must be thorough, and they must be such Examinations that a preparation for them will constitute a real education in the fullest and widest sense of the term (applause). I wish every member of the Institute, and every member of our body, would make himself acquainted with, and try to appreciate, the significance of the work that is now being done for and by what are called the lower classes,—I mean the skilled artisans and workmen in and about London and other large cities. On Saturday last I had the pleasure of going over the Finsbury Technical College, and of hearing a most able and interesting address from its Principal. I believe I am not stating more than the exact truth when I say that a young man of ordinary intelligence, who has passed through two years class work in that institution, would be better suited for an architect even than a man who had gone through three, four, or five years of ordinary articles. It would be pursuing the subject too far to point out where this leads to; I will only commend the thought to you, because if I am correct in this belief, and if it is a fact, it becomes a serious question as to what is to become of the class of men who are mere architectural draughtsmen, and nothing else (hear, hear). You have alluded, Sir, and I was pleased you did so, to the cordial relations which subsist between this Institute and our provincial brethren. There used to be a time when the idea was held that possibly this Institute considered itself as representing too exclusively the metropolitan members of the body. I am quite sure that even if any idea or wish existed now to continue that state of things,—and I am quite sure no such wish does exist,—the energy of many of the provincial bodies, and the success to which they have attained, would compel their recognition by this Institute, and would ensure their views and feelings being thoroughly considered in any work which was undertaken. The question of federation is a most difficult one, and I cannot help thinking that we should all do well to lay to heart the wise and weighty words of the concluding sentences of your address; for I am very sure of this, that any attempt to rush through an ill-considered and immature scheme, either of federation, registration, or any other -ation you like, would be the most fatal mistake which could be possibly made by any one who has at heart the real interests of the profession at large. We must not be in a hurry, but must look at the matter in all its details and bearings, and if we do that I venture to think that the day is not far distant when we shall be really able to mature a lasting federation,—a federation of aims, a federation of interests, a federation of responsibilities, and a federation of honours. That, I believe, is the kind of federation which many of the country members have been looking for, and have come to think is perhaps only a poet's dream to hope for. But if we carry out the suggestions you have made, and seriously consider all the points which bear upon the subject, I think that the members of the Committee who have the subject in charge will be able to do a good deal to speed that long-looked-for day (applause).

Professor Kerr.—I should like to add a few words to the very able speech of my friend who seconded the vote of thanks to our respected and excellent President. Sir, you have to-night, in the course of your remarks, although they were eminently of a practical character, done, in my opinion, a great deal to inculcate that form of exertion for the advancement of the dignity of the profession which I think has always characterised our Presidential addresses here. You have referred to the advancement of that excellent end by education, and by the Examinations which are proposed to be instituted and consolidated for the admission of members into this body. With regard to the Registration and Federation schemes, you have also said many wise things. I am sure we will all remember what you have said, and act upon what you have advised. But there is another subject to which you have alluded, which my friend, Mr. Slater, has not adverted to, and that is the loss we have sustained by the decease of Mr. Beresford Hope. The motion made for the vote of condolence will stand by itself, and will not prevent my saying a very few words upon the subject of that loss. It has always seemed to me that during the last forty years, the tendency of this profession has been a little downward. You and I, Sir, and some who are of our age, can remember the time when meetings of the Institute were addressed by men who had, as we thought then, very much more exalted aims than we have been accustomed to in public since. Three movements seem to me to have taken place, all under the guidance of exceedingly able amateurs, during the last forty years. There has been the movement identified with the name of Fergusson, which had for its end the advancement of the dignity of the profession by means of learning. Mr. Fergusson's learning was of the most extraordinary kind. There was another movement, the leader of which is still with us,—the movement for the advancement of architecture amongst the other arts by means of emotion,—I refer to Mr. Ruskin. But the principal movement of the three is that which is identified with the leadership of Mr. Beresford Hope, which was the advancement of the profession by means of the influence of tradition. Mr. Beresford Hope was the representative of tradition, and principally of our own tradition, although our differences of opinion on the subject may be of a very lively character. I am pleased to find that some one is to read a biographical notice of Mr. Beresford Hope in the course of the session, and I trust the opportunity will be taken of dealing with that very distinguished man, not as a mere individual unit of a group, but as the representative of a very large aim, and of a very great and considerable movement. I have always thought that, apart from all differences of opinion amongst ourselves on questions of taste, the Mediæval renaissance of the last generation is one of the most marvellous movements of ability and enthusiasm in art which the history of the world's art can show. It was peculiar to England, and it was peculiarly creditable to England, and it is that movement that I identify with the name of Mr. Beresford Hope. I trust, therefore, when the time comes, we shall be able to enter more fully into the consideration of his career, and that the very distinguished attitude which he assumed and so successfully maintained will not be forgotten (applause).

The vote of thanks was then carried by acclamation, and the President said a few words in reply.

ARCHITECTURAL MODELLING.*

I HAVE been asked to say a few words on a subject not usually regarded as one of the first importance in the education of the young architect, but it is one which, I venture to think, is of the deepest interest to him and his future clients. It is the light and shade of his building; and in assuming that the practice or the art of modelling can help forward this important section of the great art, I must say that it enters into the consideration that should be given to every touch on a building that involves light and shade, which is no less than every particle of relief that is used to ornament the structure. Now the modelled decoration of a single abstract panel is simple enough, and we see in many competitions that are annually held, that it is a question that deals with the systematic, orderly, and pleasant distribution of various details, natural or conventional, in high, or low, or flattest possible relief, but who can say more than that, in itself, the panel, as such, is a pleasant object, not offensive by any disproportion of form, light, and shade or half tone?

But the problem is a very different thing when a panel has to be so made as to take its place among an already distributed arrangement of mouldings or other projections; whether these are the proper attributes of any particular style or the accidental results of peculiar lighting. Then the panel has to fit its prescribed place, and the prescription of colour that surrounds it must be thoughtfully consulted and studied, that the designer may forward the harmony of the whole mass.

This involves a very subtle question, namely, that of the *colour* of a building. Of course, I do not mean anything that relates to pigment, but to the general tone that the light and shade of the plastic mass produces on the artistic observer.

Equally the *colour* of a statue is, of course, not any pigment with which it may have been tinted, but the value in grey that it presents, and a capable sculptor uses his colour with all the taste with which he is gifted to convey his sense of breadth or complexity, light or dark, whichever quality may best explain his meaning.

The colour of the hair of a sitter may be represented approximately, the depth of the colour of the eye, or the over-balance of some too heavy shadow may be made right by the proper understanding of this vital principle.

Now, colour in a building is much the same as colour in a statue; it requires a large experience; and in architecture as in painting and sculpture, demands a refined taste to express a breadth that shall be perfectly harmonious and never bald. I take as an illustration the diametrically different treatment that a panel designed to be exposed on the south façade of a building in full daylight or sunlight, should receive, from what must be applied to the same panel if its mission is to decorate a staircase with a narrow top light. So consider the different treatment visible in the Venus of Milo, formed to be seen in the broad light of southern daylight in harmony with the large breadths of simple Classic wall surface, and the draped figure of a saint from its position in the overarching porch of a Gothic cathedral. The colour in the two is absolutely opposite; first in the building, and, of necessity, in the details that decorate it.

Or take a façade of Bramante and one of a Romanesque building, and the difference is as light to dark, breadth of light to its opposite. The conditions under which every portion of the decoration of these opposite and contrasting works of art are so obvious that I suppose no one will take exception to the proposition that follows on, viz., That every detail must be modelled to contribute to the general tone, whether this be in the direction of breadth and light or in massive dark; or, further, that this will demand of the architect a knowledge of effect and a mastery of detail that can only be attained by dealing with each moulding and each relief as a part of a whole. The decoration should be plastic and amenable to each wish or fancy of its author.

Light and shade enter into the ultimate treatment of each angle, cornice, surface, and plane, large or small; therefore all combine to give "colour" to a building. If we accept the truth of this statement, how necessary, then, is it that the young architect should *model*.

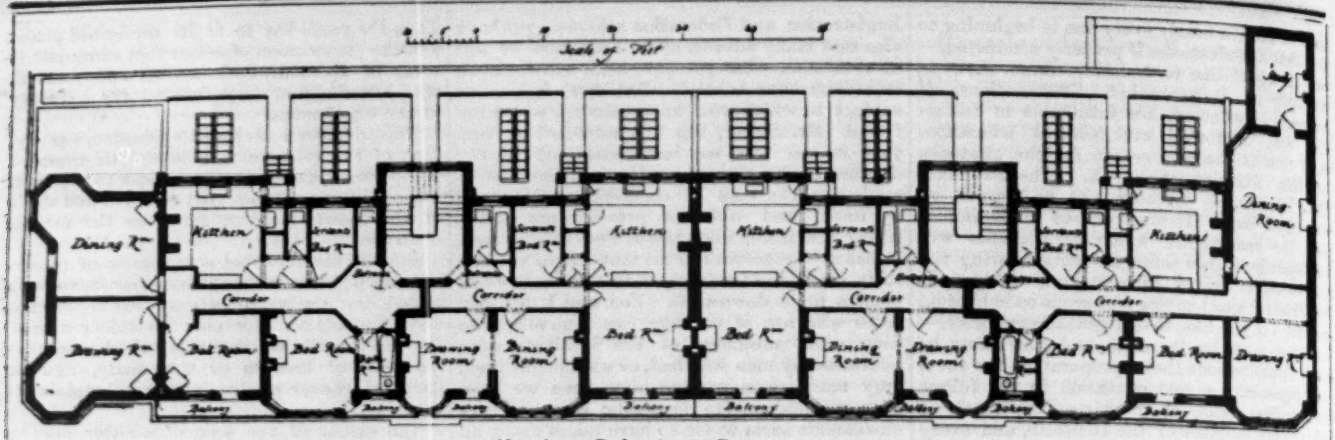
Colour, then, can consist of the aggregate values of light and shade in its largest significance, and must be studied down to its smallest details. And this involves the consideration of how it is to be done.

The historic method,—that is, a progressive course of graduated form from early to late in any particular style,—seems at first sight the most reasonable and satisfactory, so far as mere modelling goes, and is indeed so, if we aim merely to give a clear idea of form, surface treatment, and light and shade of particular parts of any building; and with this in view the student should commence with some rather simple panel, and learn the use of his material from the free imitation of the chosen object, never losing sight of the fact that many beautiful objects, such, for instance, as those carved in hard stone, wherein the greatest fineness of line is possible and is expressed, are clearly not suitable for copying in clay. In such a case a translation may be made.

Or again, a rough piece of wood-carving, partly saw-work and mainly gouge-work, is not to be imitated in clay; here the careful and capable guidance of a good teacher is necessary. But enough remains that is quite right in method for the architect to copy accurately and even servilely.

The genius of the material deserves some study. Clay is plastic; it is added piece by piece, layer on layer, until the desired contours are reached.

* A paper by Mr. J. C. L. Sparkes, of the National Art Training School, South Kensington, read before the Architectural Association on the 4th inst.



Mansions, Duke-street, Grosvenor-square.

This is the very opposite of a carving, when out of a block the desired contour and figure are cut; and it is sometimes difficult for a student to realise that he must not scrape and carve down a lump of clay to some smaller form.

For these reasons the examples should be wisely chosen in consonance with the genius of the material.

With this in view the architectural student should model not only architectural details, but also the human figure, for in this section of study *colour* will become one of the qualities he will learn to appreciate; and if he should be able to obtain any great power in figure modelling, the question of colour in his work will be constantly before him, and in that case he will, I am certain, not fail to admit its very great importance.

As to where this study can be carried on, I for a few minutes ask leave to call your attention to the isolation, if I may use the word, that surrounds the average Government Art School. The manufacturer does not, to the fall of his requirements or opportunities, use the art school. In many cases the manufacturer is absolutely indifferent,—and a condition of isolation undoubtedly often exists between the school of art and the manufacturer. The connecting link is, I am convinced, to be found in the secondary, or technical, or advanced schools of art, where the classes shall be few, with masters who shall be specialists, the best men in their calling, and where the work shall be essentially practical and technical, and carried on to the farthest possible point. The art school has prepared the ground, the technical school sows the particular crop it is desired to raise, and the manufacturer and employer of art labour see their interests are advanced by the excellent teaching their apprentices may obtain in these secondary schools. An important instance of such an extension of art-school work is seen in the Technical Art School at Kennington, which has grown out of the Lambeth School of Art, an institution that, unaided, has done its share of work in helping the local manufacture to a name and an importance that has generally been admitted they have attained.

I invite the attention of all interested in this work to this school, where instruction is given by a modeller and sculptor, capable in all the varied sections of architectural decoration, and in figure no less.

I say sincerely that the entire district is deeply indebted to Mr. William Silver Frith for the work he is doing in the South of London.

I wish to say that the clearsightedness of the City and Guilds of London Institute has allowed this absolutely necessary work to be done; and further, I here wish to record my grateful sense of their liberality that so fully supports one of the most interesting and useful Art Schools in this city.

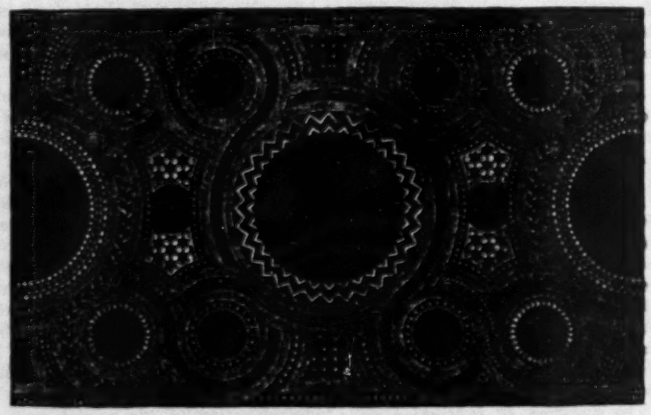
[Want of space this week compels us to hold over our report of the discussion which followed.]

St. John's Church, Macclesfield.—Mr. R. A. Briggs, A.R.I.B.A., writes:—"I notice that in the account of the consecration of St. John's Church, Macclesfield, in your last issue of the *Builder* you state the architects are Messrs. Valmister & Briggs, of Macclesfield. It should have been Messrs. Killmister & Briggs, joint architects, London."

Illustrations.

EXAMPLES OF ANCIENT WORK IN PORPHYRY.

THESE examples are given in this number as affording a kind of practical and artistic comment on the paper on Porphyry read by Mr. Brindley at the recent meeting of the British Association, an abstract of which is given in another column. The two sarcophagi from the Vatican illustrate the use of porphyry in relief sculpture; the seat illustrates its applicability to the symmetrical and conventional forms of classic ornament.



Pavement, Lateran Church, Rome.

The fourth illustration, the Tomb of Costanza, is the most characteristic of the four, giving an example of a treatment in strongly marked and rigid lines of design precisely suited to the nature of the material.

The accompanying illustration of the floor of the Lateran Church at Rome is an instance of the use of porphyry for the larger central masses of the inlay.

DUKE STREET MANSIONS, GROSVENOR SQUARE.

THIS block of residential flats is now in rapid course of erection in Duke-street, Grosvenor-square, close to the corner of Oxford-street.

The building will form a conspicuous feature from Oxford-street, and will be even more so when the remainder of Duke-street is widened, which work will probably be commenced very shortly. The end flanked by the two turrets faces towards the square, whence an uninterrupted view will directly be obtained, as the Duke of Westminster is about to demolish a block of houses adjoining, and form an ornamental garden in its stead.

The ground floor and basement are intended for business premises, while two entrances (with hooded pediments over), and staircases lead to the residential flats above.

There are four sets on each floor, varying somewhat in size, but each set is complete and self-contained.

The plans will explain the general arrangement, which broadly may be described as having every reception and bed room to the front, while the domestic arrangements, &c., monopolise the back.

The building is being carried out by Messrs. Howell & Son, of Bristol and London, with the terra-cotta work by Messrs. Doulton, of Lambeth, while Mr. Sprague is acting as general foreman. The architect is Mr. J. T. Wimperis.

The drawing from which the illustration is taken was in the Royal Academy exhibition of this year.

WILLESDEN NEW PUBLIC OFFICES.

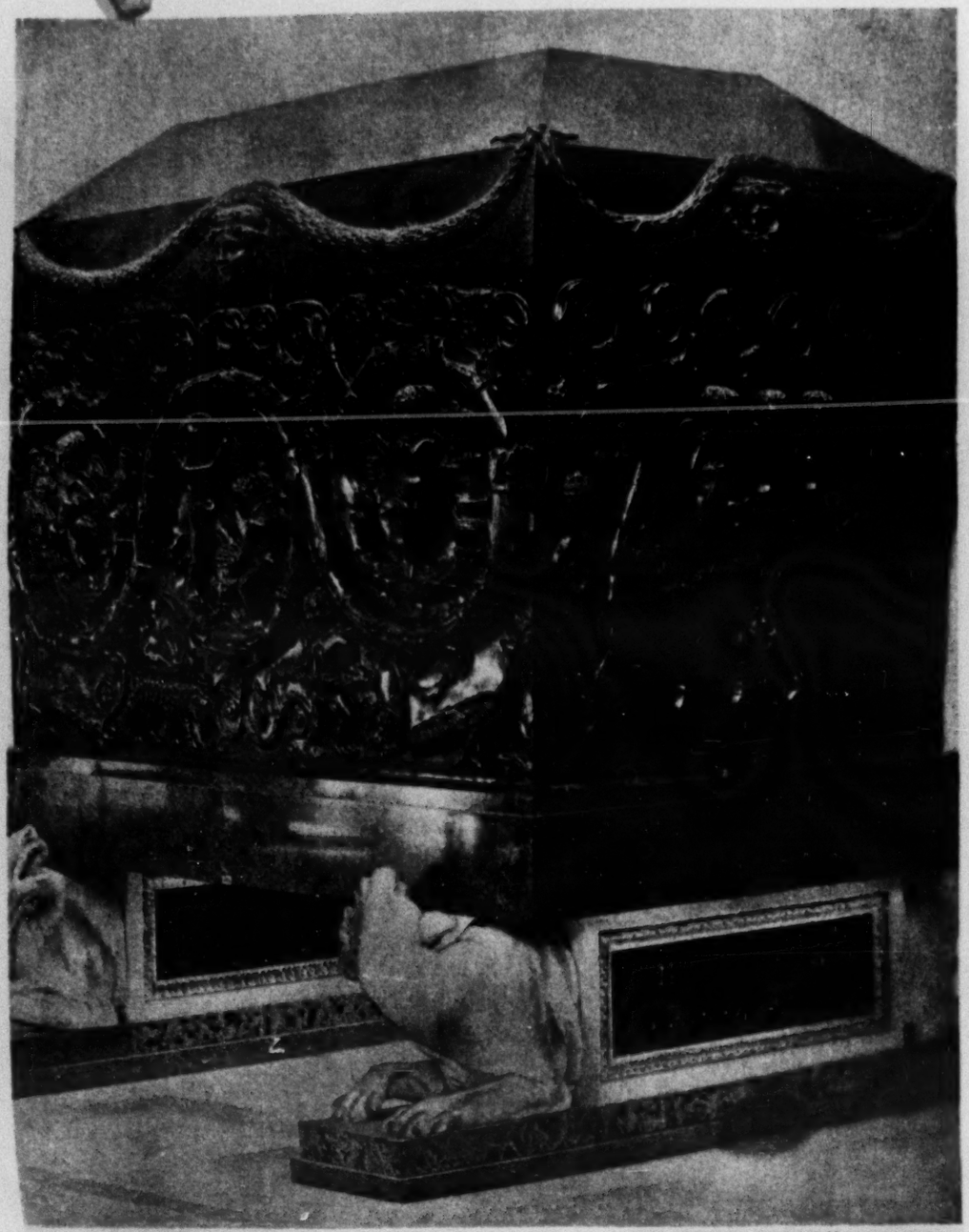
THIS design was submitted in the recent competition for the above offices by Mr. Arthur Ardron. It was proposed to use red brick and stone dressings for the external fronts, and strawberry-coloured tiles for the roofs, excepting to tower and turret, which would be of lead. The building to the right of the view shows a public hall proposed to be erected at a future time, and was not included in the stipulated amount of 6,000*l*. The upper part of the tower would contain chamber for clock, water cisterns, &c.

CHRIST CHURCH, PAIGNTON.

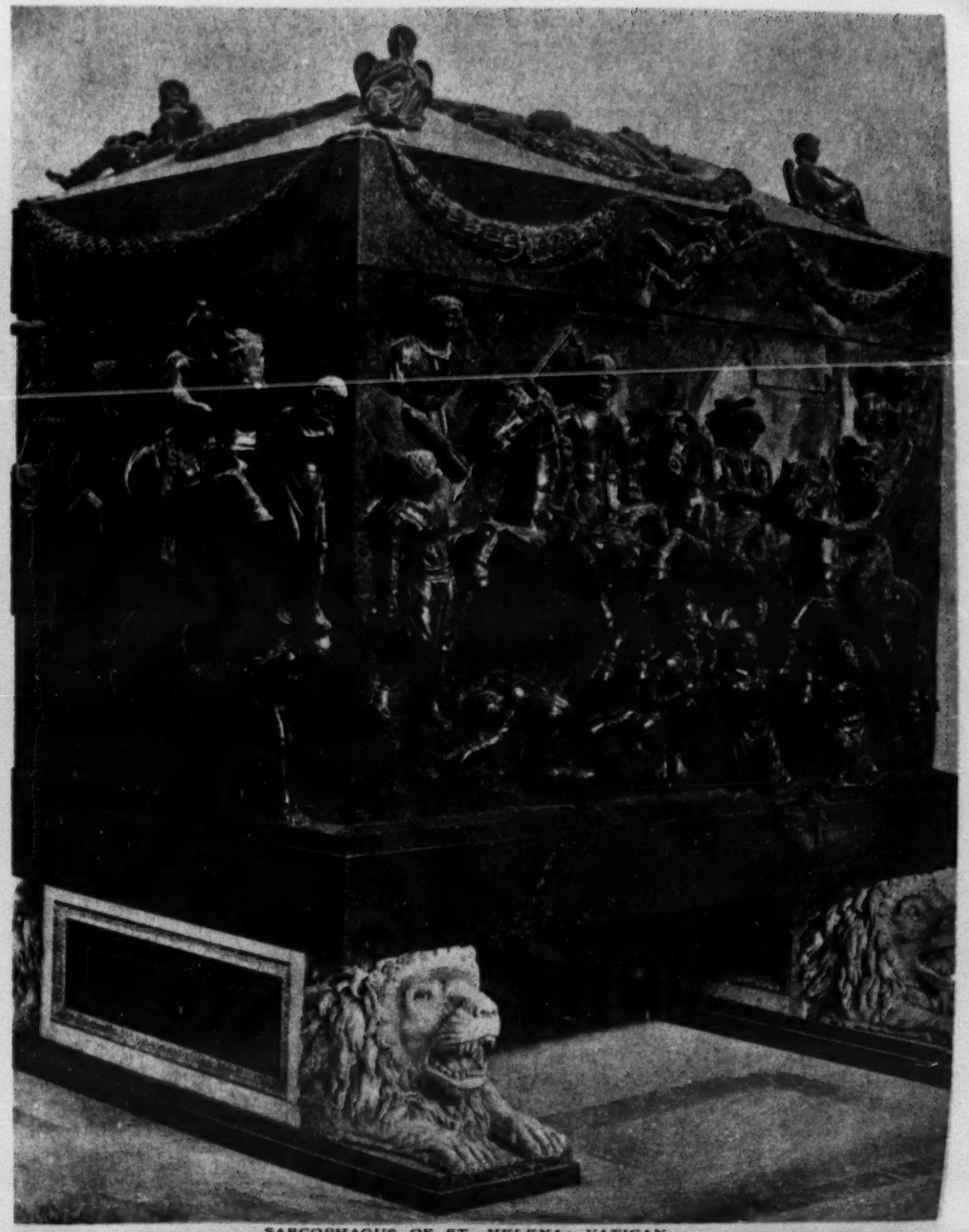
THIS church is being built to supply additional accommodation in the district of Paignton, on a site eligible for church, schools, and parsonage-house, given by the Ecclesiastical Commissioners (who have also contributed towards the endowment). The foundation-stone was laid early in the year by the Bishop of the diocese, and the work is now being rapidly proceeded with. The church consists of a nave 30 ft. wide, with narrow aisles to be used as passages only, north and south transepts, chancel, 24 ft. wide, with apsidal end, organ-chamber, and vestry. A narthex is provided at the west end giving access both to the nave and aisles. The tower, which is at the south-west angle of the building, serves as a baptistery, and is furnished with a lofty spire, 180 ft. high. Accommodation is provided for 550 persons.

The walls are being built with local red sandstone, squared and tooled on the face both for the interior and exterior, with Bath stone for all dressings, with the exception of the plinth courses, which are of Marychurch limestone. The whole of the floor space, with the exception of the chancel and narthex, is to be laid with wood-block paving.

The design was chosen in a limited competition, and is the joint work of Mr. Edward Gabriel and Mr. W. G. Couldrey, under whose supervision the work is now being carried out.

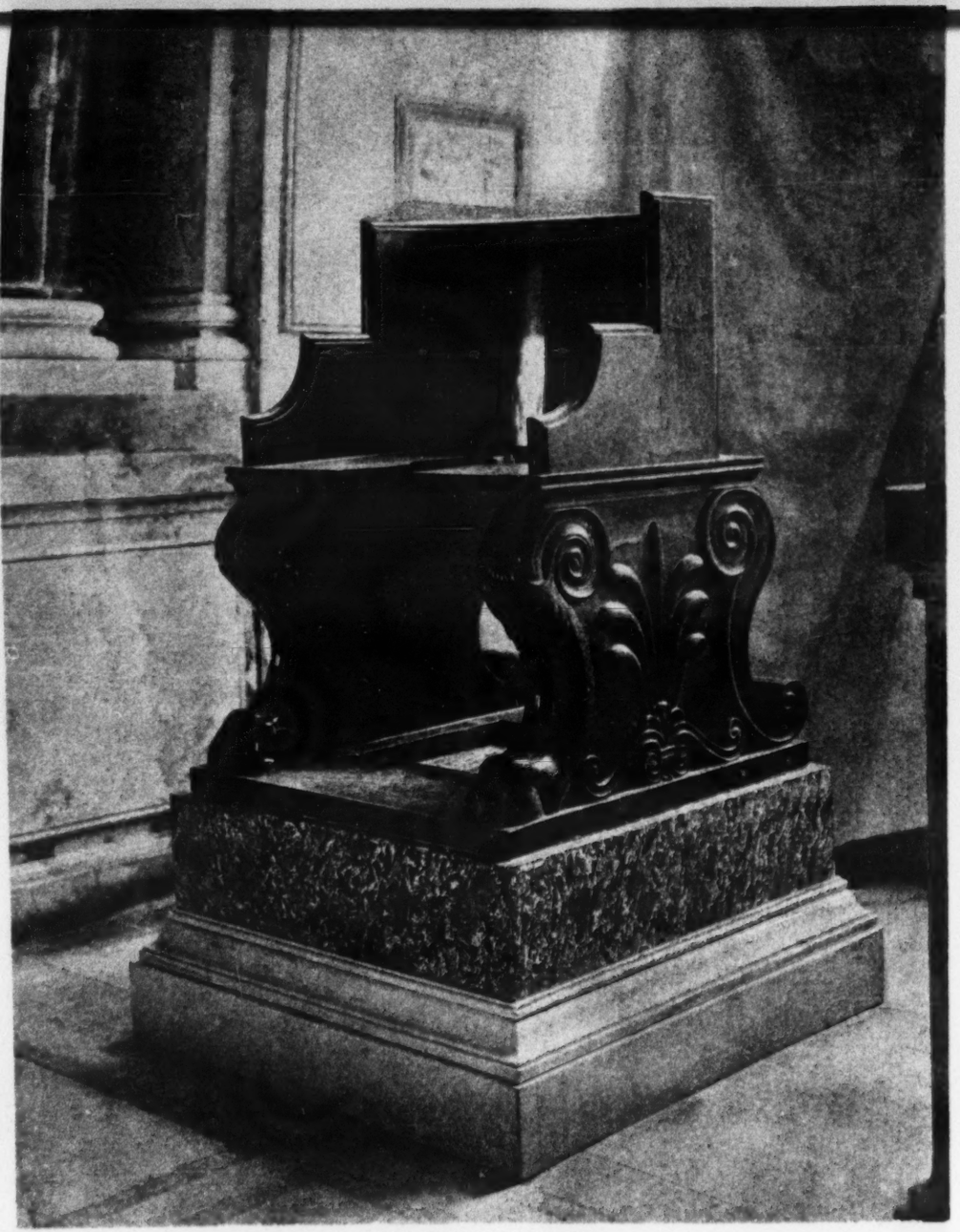


SARCOPHAGUS OF CONSTANTIA, DAUGHTER OF CONSTANTINE: VATICAN.



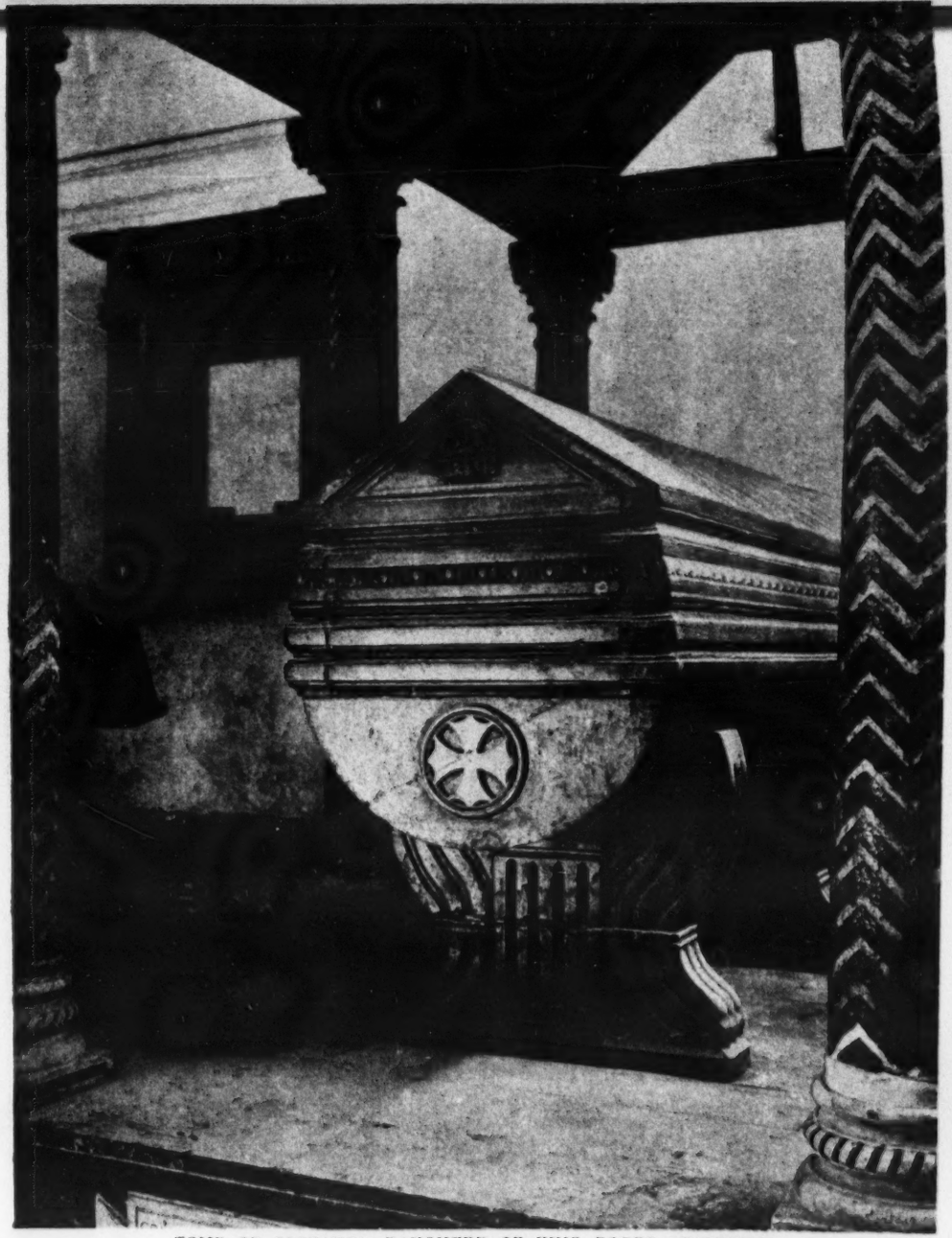
SARCOPHAGUS OF ST. HELENA: VATICAN.

SARCOPHAGUS OF CONSTANTIA, DAUGHTER OF CONSTANTINE: VATICAN.



SEAT, VATICAN MUSEUM.

SARCOPHAGUS OF ST. HELENA: VATICAN.



TOMB OF COSTANZA, DAUGHTER OF KING ROGER: PALERMO.

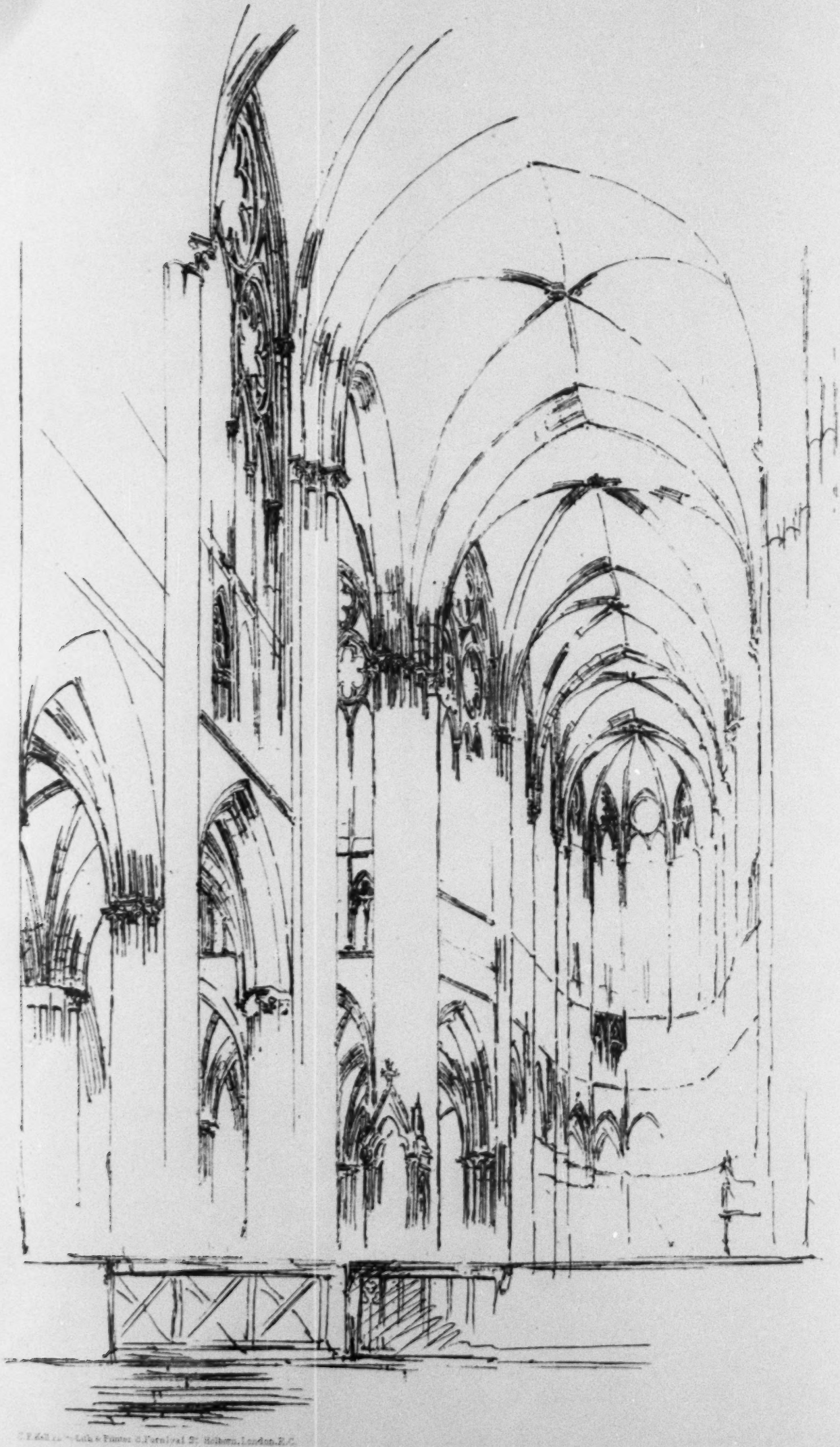
"INK-PHOTO," SPRAGUE & CO. 26, MARTINS LANE, CANNON ST. LONDON, E.C.

EXAMPLES OF ANCIENT WORK IN PORPHYRY.

DUKE STREET MANSIONS, GROSVENOR SQUARE

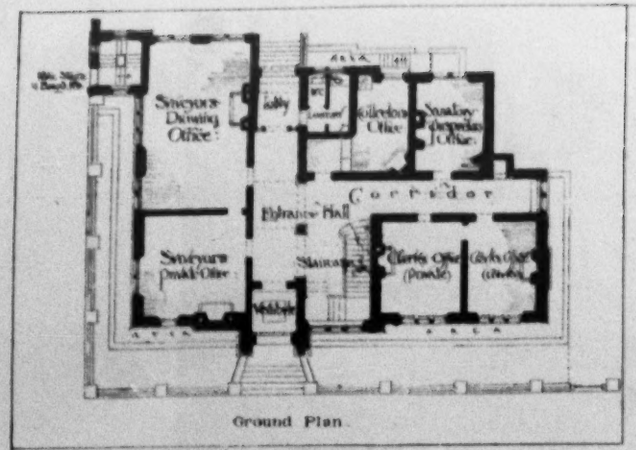
PHOTO-LITHO., SPRAGUE & Co 22, MARTINS LANE, CANNON ST, LONDON, E.C.

UARE.—Mr. J. T. Wimperis, F.R.I.B.A., Architect.

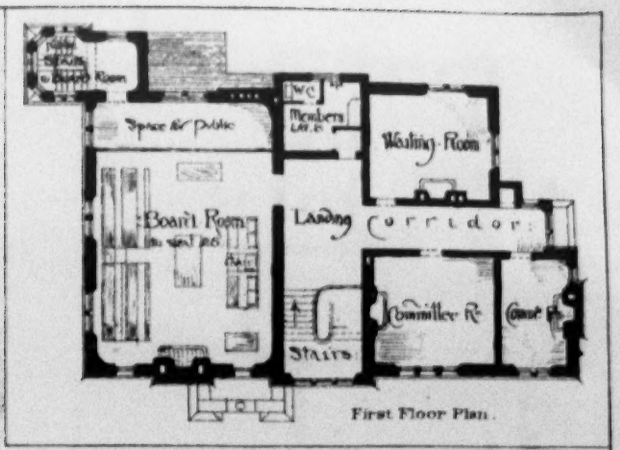


C. F. Hall & Co., Lith. & Printers, 6, Fetter Lane, Holborn, London, E.C.

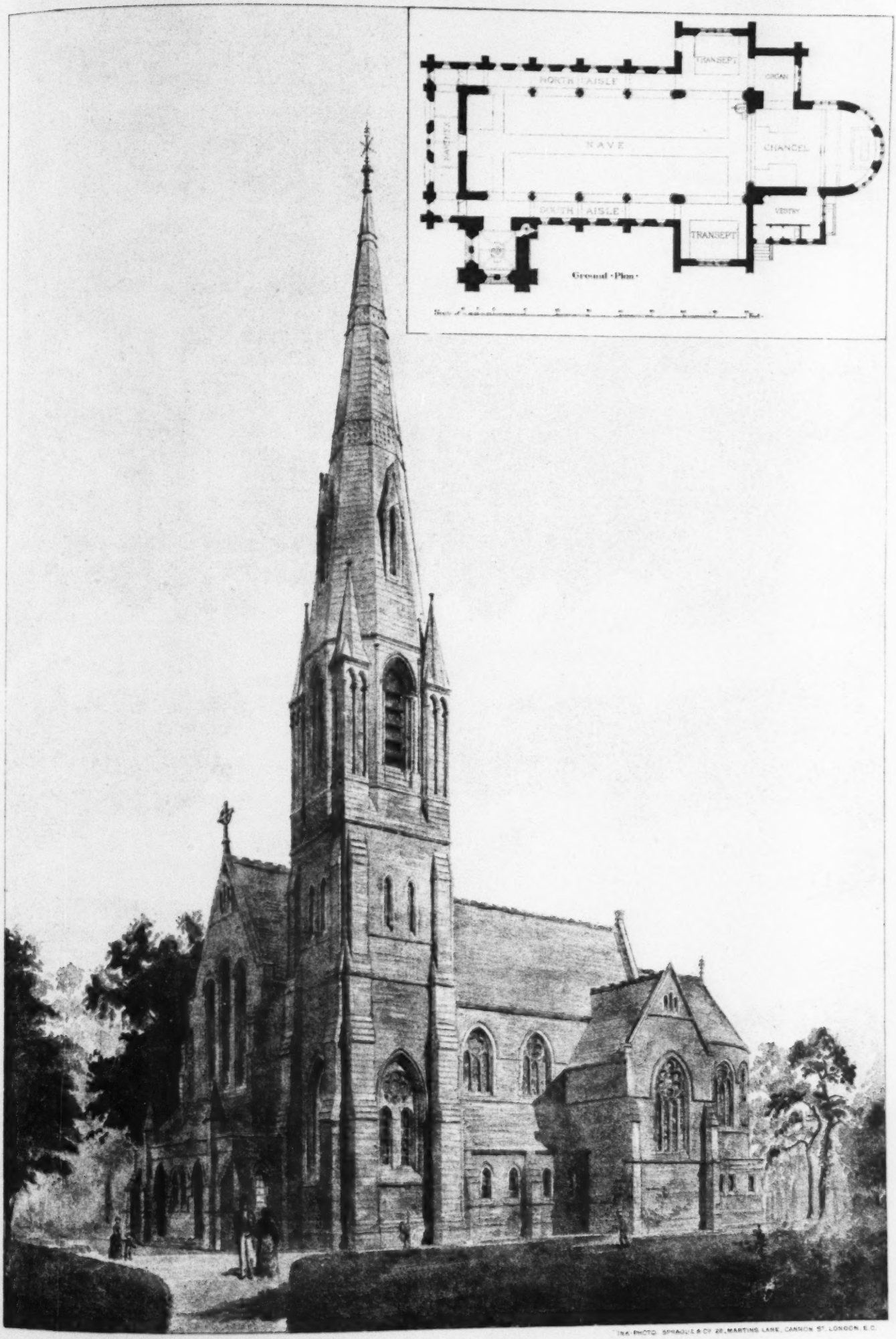
INTERIOR LOOKING EAST, ST. DENIS.—FROM A PENCIL SKETCH BY THE LATE MR. G. E. STREET.



Ground Plan.

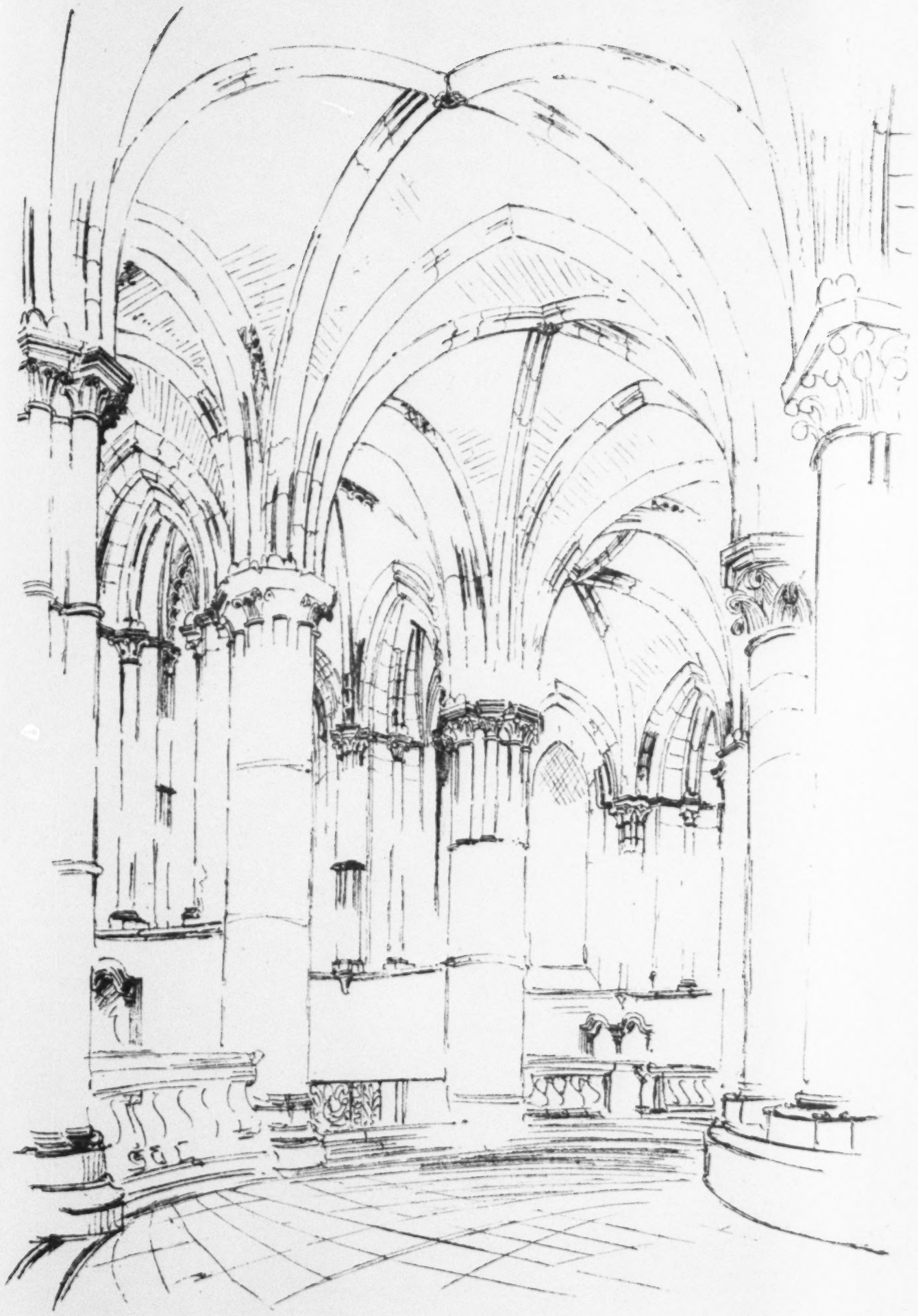


First Floor Plan.



INK-PHOTO. SPRAGUE & Co 28, MARTINS LANE, CANNON ST. LONDON, E.C.

CHRIST CHURCH, PAIGNTON, DEVON.—Mr. E. Gabriel, A.R.I.B.A., Architect.



C. F. Kell Photo-Lith & Printer 6 Furnival St Holborn, London E.C.

CHEVET, ST. ETIENNE, CAEN.—From a Pencil Sketch by the late Mr. G. E. Street.

The contractors are Messrs. C. & R. E. Drew, of Paignton, Mr. A. Leeming, of Torquay, acting as clerk of works.

SKETCHES BY THE LATE MR. G. E. STREET.

These are reproduced from pencil sketches by Mr. Street. They are of interest, not only as being his work, but as representing a method of rapidly obtaining the facts of a building in sketching, giving the main features in broad outline, and filling up enough of the detail to form a memorandum of the whole architectural treatment.

EGYPTIAN PORPHYRY.

The following is an abstract of a paper by Mr. W. Brindley, read at the recent meeting of the British Association at Manchester, on "Egyptian Porphyry and its Uses, with an Account of a recent Visit to the ancient Quarries across the Eastern Desert in Egypt":—

Many persons ask the question, what is Egyptian porphyry? the reply being, It is a red-purple coloured stone of considerable hardness, susceptible of a high polish, containing white and pink crystals of felspar in a silicious paste. It was called porphyry from its colour, the imperial purple, the heir apparent after Constantine the Great being named the Porphyrogenitus, or born in the porphyry room, which was at Constantinople. In architecture under the Cæsars it was the most valuable material the empire could produce, and has remained so down to the present day, it being much sought after by art collectors of the world. Grand examples are seen in the monolith columns of St. Sophia, Constantinople, and in some of the edifices of Rome. It was also used for sculpture, sarcophagi, &c., and during the Middle Ages immense quantities were cut up for costly pavements, similar to the one in the sanctuary of Westminster Abbey, where also a slab may be seen in the tomb of Henry III., concerning which Dean Stanley remarked "it lit up the abbey."

Ancient writers differ as to the whereabouts of the old quarries, Pliny saying they were in Egypt, and capable of producing blocks of any size. These quarries were actually rediscovered by Burton and Wilkinson in 1823, and visited by Lepsius in 1845, but as neither of them had brought away specimens, nor taken any notes as to the quantity of porphyry remaining, their information was not of the practical value it might have been, and as in late years it has been announced that the quarries have been discovered first in one country, then in another, it became somewhat perplexing.

I have had the pleasure of examining rock specimens of all the localities mentioned by various modern authorities, and have found that none of them are antique porphyry.

I therefore resolved to follow the footsteps of Wilkinson.

In company with my wife, in February this year I arrived at Cairo, and was fortunate, through Sir Evelyn Baring, in being introduced to Mr. E. A. Floyer, a gentleman actually conversant with this Desert, and who was able to supply me with a map from Keneh on the Nile to Gympsa, on the Red Sea. We then proceeded to the First Cataract on the Nile, especially to see the ancient granite quarries that supplied Egypt with materials for her temples and obelisks. Here I observed that these quarries not only supplied the deep red, but the rose and dark grey also, the colours often coming in contact in the same block. The so-called obelisk and other large blocks remaining in the quarries are all of Roman date, and the system of quarrying was, in my opinion, by metal wedges, and not wood, as is generally supposed,—the same method being used to break up the immense granite statue of Rameses at Thebes. Returning now to Keneh, where our caravan was formed,—first of nine camels, which ultimately grew to fifteen, and nineteen attendants, all food, water, tents, and bedding, with provender for the camels, having to be carried for three weeks in case of emergency,—after several delays through the obstruction of the Mudir, and the obstinacy of the Bedouin sheiks, we at last got on our way, and, passing through streets of potters, soon reached the outskirts of the Desert. The first day we went through a wide plateau, with a well-trodden camel road.

The next day we encamped at an ancient Roman station, protected by a picturesque fort on an adjoining height, where fragments of Egyptian porphyry were found. The following day at noon an important station, with reservoir, fort, and wells (now dry), was passed. The road now lay through an extensive open plain. In the evening the low rocks of the igneous range were reached, the gradual ascent from the Nile to this point being 600 ft.

The next day till noon our way was between hills of red granite and black shaley trap rocks; here part of a porphyry column was passed. At luncheon time another important station called the Monastery was reached, where lay a number of porphyry blocks partly buried in the sand. A ride of fifteen miles, through picturesque rocks with the high mountains in the distance, brought us to the charming valley of Waddi Kittar, hemmed in on three sides with precipitous mountains 5,000 to 6,000 ft. high, the valley leading to a gorge in which is a dripping well of excellent water, with ferns, figs, and palms. Here the camels drank, a day's rest being taken in this valley, where was another Roman station. Soon after leaving Kittar we reached the watershed, the altitude being 2,400 ft., the drainage going respectively to the Nile and the Red Sea. The immense porphyry mountain of Gebel Duchan we were now alongside of, and arriving a few hours afterwards at an old Roman station, with an interesting fort at the foot of a mountain pass, we decided to encamp, whilst I made my excursions on Gebel Duchan to find the old quarries.

The Desert route thus passed over, with its forts and wells, must be older than the Christian era, as Strabo, who visited Egypt in the reign of Augustus, remarks about this route to Myos Hormos, which was the high way to India, as follows:—"Now watering places are provided, water is also obtained by digging to a great depth, and rain-water is found, although rain rarely falls, which is also collected in reservoirs."

I began my mountain ascent at 5·30 the next morning, in company with a Bedouin and a Luxor Arab. We followed an ancient Roman road which went direct from a well near our camp to the pass of the mountain. At an altitude of over 2,000 ft., we found a station similar to those in the desert. From hence to the summit of the pass the road is a narrow tract zigzagging on one side of a ravine, and very difficult of ascent, being partly covered with fallen rocks. At 8·30 we arrived at the top of the pass, the height being 3,100 ft. Here is a square watch-tower. I had now got very disheartened, not having found in ascending a fragment of porphyry. The view on the other side revealed a regular amphitheatre of rocks, all desolate, like an extinct volcano; while in the bottom could be seen an old town (the Medeeneh), where my companions thought I was going, but espying, by the aid of a good field-glass, porphyry colouring on the opposite mountain, I resolved to go thither. To this my attendants most positively objected. What further encouraged me was that the old path I could see divided half of the way down,—one part going direct to the town, the other to the purple tinting opposite. We went on to the junction, my companions stopping behind, I taking from them my cold tea, lunch, and sketch satchel, making them tempting offers of good "backsheish" to accompany me, but all with no avail; so I proceeded alone, when in about seven minutes I heard a noise and found they were following me. On arriving at the foot of the opposite mountain my delight knew no bounds, the ground being strewn with pieces of the most sumptuous porphyry, while a little farther on was the actual pitched way or slide, some 15 ft. wide, down which the blocks came, with piers at the sides for lowering them, while a number of blocks, some of large size and others broken, lay here; there were also adjoining a number of workmen's sheds. This road for a short distance was very good, but after awhile it became strewn with masses of rock, and in many places was utterly destroyed by the periodical torrents, the scrambling and climbing being most difficult under a cloudless sky. Near the top the road was good again, but, instead of it leading me into the quarry, I found it going over the mountain and could trace it winding down another valley. It was now noon and I was completely exhausted: so, finding shade under a ledge of rock, we took our lunch, after which I made a hasty sketch of a most marvellous view over the Red Sea, with Sinai in the distance. Now refreshed and retracing my steps, I began again to climb, shortly arriving at a number of workmen's huts, and next an extensive face of rock, in which I expected to find worked veins of porphyry, but nothing could I see but "ochre" colour, when presently I noticed that the rock and all the loose masses were covered with wedge-holes the same as in the granite quarries of Assouan. I was at a loss to know for what purpose this stone had been quarried, or what it really was, it looking much like felspar; so knocking off with the hammer a flake chip, I immediately discovered that it was porphyry, all the solid rock and everything under my feet being the same precious material, the surface colour being simply an ochreous wash from some rocks above. Further examination showed me where the Romans had extracted their grandest masses, and not only do these quarries produce the usual spotted variety, but all the brecciated sorts and green greys. I noticed one pilaster block of large size, part wedged off by a series of holes in the vertical face of the rock. It would have been almost impossible to expand wooden wedges with water in this position. I feel sure they used iron, or rather steel tools, for dressing the stone, and I do not see why they should not have used metal for wedges.

The road I mentioned before as going down in another valley I think was the road for blocks at a later date, as this would save twenty-five miles between this spot and the Monastery station; and in this valley is another town with workshops containing unfinished porphyry objects.

The altitude of the great quarry I found to be 3,650 ft. I now determined to return by a path I could see going towards the "Medeeneh" (the old town). This path led me alongside of a number of small quarries, of thin bed, but good colour, the porphyry being in a grey coloured granite, extremely rotten, breaking up like dried earth or decayed Purbeck marble. At one spot I observed a bust roughly shaped, and mortars part finished. We got into the valley at about 3·30, and found the old town on a slight elevation, out of the way of the torrents. It was much larger, but very similar to the stations along the Desert road. In the plain of the valley there is also a cistern, with piers all round, and plastered, on which are scratched rude drawings of ships with single masts.

Further up the valley is a small Roman temple, the portico of which is in granite, with a Greek inscription of the time of Hadrian, which reads thus:—"For the safety and perpetual success of our Lord the Emperor Hadrian and his whole house, this temple and its precincts were dedicated to the Sun-god, great Serapis, and the gods associated with him, by Epaphroditus Sigerianus, a slave of the Emperor, when Rhammius Martialis was Prefect of Egypt, Marcius Ulpius Chresimus procurator of the quarries, and Rufus proculeianus [superintendent of the marble works]." In a similar inscription at Djebel Fateereh, Epaphroditus dedicated another temple to Serapis, A.D. 418, he is called "lessee of the quarries." Inside is a small altar. The whole is now in ruins. On the plastered wall of the cell, in large red letters, are W. 1823, L. 1845, S. 1877-78; following which bad example, I added, in indigo, "W. B. 1887, and quarries," the letters meaning Wilkinson, Lepsius, and Schweinfurth, according to which later authority there is another station down the valley, and a depôt further back for the loading of the blocks, which were taken to the Nile, a distance of 96 miles. The new route will be by a gentle incline to the Red Sea, which is about 25 miles. The Bedouin found in a ravine some good water, and we now made our way back for the camp, arriving at the Saddle Pass at five, it being sunset, and quite dark before we well reached the plain. When going on in single file, the Bedouin disappeared into a deep ravine, escaping with a cut leg, which he plastered with sand. We arrived at the camp very late, the dragoman having posted lanterns on the rock hillocks to guide us. After a day of rest and sketching, we returned for Keneh by the same route, arriving safely at the Nile after thirteen days spent in the Desert, and 170 miles of camel riding. Lastly, getting back to Cairo, terms for a concession to rework the quarries were agreed upon, which have since been ratified.

Trinity College, Dublin.—The alterations which were being made at this College are now completed. They include improvements in the ventilation, Boyle's ventilators being used.

BUILDERS' BENEVOLENT INSTITUTION.

ANNUAL DINNER.

The fortieth anniversary dinner in aid of the funds of this Institution was held on Thursday, the 3rd inst., at Carpenters' Hall, London-wall. Mr. Herbert H. Bartlett (of the firm of Perry & Co.), President of the Institution, occupied the chair, and was supported by Mr. H. Clifford Smith (Master of the Carpenters' Company), Mr. Basil E. Peto, Mr. H. Colls, Mr. T. F. Rider, Mr. George Plucknett, J.P., Mr. L. H. Isaacs, M.P., Mr. Banister Fletcher, F.R.I.B.A., and other friends of the Institution.

The Chairman gave the toast of "Her Majesty the Queen, the Prince and Princess of Wales, and the rest of the Royal Family."

Mr. Basil Ellis gave the toast of "The Army, Navy, and Reserve Forces," Major Brutton replying for the "Army and Navy," and Col. Banister Fletcher for "The Reserve Forces."

The Chairman, in proposing the toast of the evening, "Success to the Builders' Benevolent Institution," said that the history of the charity was an honourable one. Since its foundation it had granted relief to no fewer than 234 pensioners. During the past year ten deaths had occurred among the recipients, and nine persons who had been waiting for the benefits of the charity had been elected. The total number of pensioners on the Fund was now thirty-two men and thirty-three women. There was a large annual expenditure, and the committee were deeply anxious to obtain new subscribers, as many who had given regularly to the Institution had been removed by death. The income of the past year had not been sufficient to meet the expenditure, and it had therefore been found necessary to withdraw the balance of the reserve fund. There had been a large increase during the year in the number of applicants seeking election, and that would continue to be the case as the building trade and the population went on extending. The expenses of administration were as low as they could possibly be, and no expensive machinery was employed. It might be news to some of his hearers to learn that the building trade gave employment to more people than any other single trade in this country. It was an important trade, but was at the same time a life of great uncertainty, being continually subject to untoward events, any one of which was quite sufficient to plunge a man from a comfortable position into a condition of need. The fall was often very sudden, and it was important that those who were able should do all they could to mitigate and alleviate it. Good as donations were, annual subscriptions were much more valuable, as they could put the Association on such a basis as would enable the committee to provide not only for what they had actually in hand, but also for the claims which were always coming in. He was sorry to find that the annual subscriptions had fallen off, as many of the subscribers had died, while others, from causes beyond their control, had been obliged to discontinue their annual payments. He would, therefore, impress upon his hearers the desirability of each of them getting at least two friends who would be willing to give a small annual amount, as it would give the Committee greater confidence in administering the funds of the Institution.

The toast having been duly honoured,

The Chairman next gave "The Health of the Carpenters' Company." The builders, he said, felt almost like "brother chips" in meeting in that fine hall, and chips, too, of a good old block. The Carpenters' Company had done much good work in building schools and establishing scholarships, and it gave the Builders' Benevolent Institution quite an important standing before the world when it was seen that they were being recognised and helped by one of the great City Companies.

The toast was very heartily received.

Mr. H. Clifford Smith (Master of the Carpenters' Company), in returning thanks, said that there was a close connexion between his Company and the Builders' Benevolent Institution, for the carpenters were the only recognised builders at the time of the creation of the Company. They were all working on parallel lines for the benefit of the craft, although at opposite extremes. The Institution was holding out the hand of benevolence to those who had failed in the battle of life, while the Company was striving to prepare the rising generation to take a higher stand than their predecessors had occupied. He concluded by making an appeal to the great employers of labour to make the Exhibition to be held by the Carpenters' Company in the Spring a great success.

Mr. L. H. Isaacs, M.P., gave,—"The Chairman and President,"—adding that he had watched Mr. Bartlett's career with great interest, and it had not surprised him to find that gentleman occupying the chair on such an important occasion.

The toast was well received, and the Chairman replied in suitable terms.

Mr. T. F. Franklin proposed the toast of "The Vice-Presidents and Trustees," which was responded to by Mr. Thos. F. Rider and Mr. Howard Colls.

Mr. Basil E. Peto proposed "The Treasurer" (Mr. George Plucknett, J.P.), and referred in feeling terms to Mr. Plucknett's unremitting interest in the welfare of the Institution.

Mr. Plucknett, in replying, remarked that if all the London builders would exercise their privilege of subscribing to the Institution, the Committee would not have year by year to make such an urgent appeal to the old subscribers.

Mr. W. Shepherd gave "The Architects and Surveyors." Those engaged in the building trade knew how important it was to have the sympathy and consideration of the two professions. To a certain extent the destinies of the builders were in their hands. The architectural profession had improved wonderfully, and great credit was due to the Royal Institute of British Architects for their efforts in raising the tone of the profession. As to the other portion of the toast, he did not know who would not place himself in the hands of a proper quantity surveyor. He coupled with the toast the names of Mr. Banister Fletcher and Mr. C. B. Arding.

Mr. Banister Fletcher said he thought such meetings of architects and builders were of the highest value and usefulness. He begged the builders to consider the enormous difficulties under which architects laboured. Architects were commonly supposed to be antagonistic to the builders, but that was not the case. They wished to let the public know that their desire was simply to see that the work was honestly carried out, and that the builder should have his fair profit.

Mr. C. B. Arding responded for the Surveyors.

Mr. C. E. Edwards gave the concluding toast, "The Committee and Stewards," which was responded to by Messrs. J. T. Bolding and J. Hill.

In the course of the evening subscriptions and donations amounting to 701*l.* (of which sum 457*l.* appeared on the President's list) were announced.

ELECTION OF A DISTRICT SURVEYOR.

Thirty-two gentlemen presented themselves at the Metropolitan Board of Works on the 4th inst. as candidates for the vacancy in the District Surveyorship of Charlton, Lee, and Kidbrooke, caused by the death of Mr. J. S. Edmeston, who was only elected to that office in January last.* The election was conducted by ballot, in accordance with the Standing Orders of the Board of 1st April, 1887 (No. 8), regulating the election of District Surveyors, viz.:—

"That on the occasion of future elections of District Surveyors the number of candidates be reduced to six, at a Meeting of the Board, by one ballot, at which each Member may vote for six persons whose names are in the printed list; and that the result of such first ballot be ascertained by scrutineers, consisting of two Members of the Board, to be appointed for that purpose, together with the Clerk or his representative."

"That the six candidates selected in the manner prescribed by the foregoing Resolution be balloted for, each Member of the Board voting for one candidate only, until some one candidate has the votes of a majority of the Members present; and that at each ballot the name of the candidate having the smallest number of votes, and also names of all candidates who have less than 20 per cent. of the total number of votes, be struck off the list."

The following are the names of the candidates, the figures appended thereto indicating the number of previous applications made by each†:—

Blackbourn, H., 3; Bridgman, H. H., 23; Brooker, J. W., 2; Cheston, H., 18; Coggin, C. T., 1; Cowper, P., 6; Eales, F. E., 5; Edwards, G., 10; Farrow, F. R., 3; Ferguson, J. M., 23; Francis, R. F. C., 10; Goodchild, J., 3; Grellier, W., 24; Hamilton, F. W., 5; Hamilton, J., 15; Hamilton-Gordon, G., 8; Hardcastle, W. J., 10; Haslehurst, E., 12; Heyes, A., 5; Inskipp, G., 18; Jackson, G., 18; Lean, G. A., 15; Nash, W. H., 17; Pelly, H. A., 8; Saunders, C. G., 5; Saunders, M. L., 8; Slater, J., B.A., 1; Spiers, W. L., 15; Stevens, W. H., 15; Stock, H. W., 18; Swatman, E. L., 3; and Woodthorpe, E., jun., M.A., 3.

The results of the voting were as follows:—

		First Ballot.	Second Ballot.
Bridgman, H. H.	(24th application)	23 ...	6
Grellier, W.	(25th ,,)	16 ...	—
Hardcastle, W. J.	(11th ,,)	31 ...	6
Saunders, M. L....	(9th ,,)	19 ...	8
Spiers, W. L.....	(16th ,,)	36 —	23
Stock, H. W.....	(19th ,,)	27 ...	7
Woodthorpe, E., Jun.	(4th ,,)	16 ...	—

The foregoing seven names were returned by the scrutineers as having the highest number of votes cast in the first ballot to reduce the number to six, but as there was a tie here between Messrs. Grellier and Woodthorpe, the Board resolved by show of hands to strike out both names without balloting as to which of the two should be retained, although not without the question being raised by Mr. Hughes whether that course could fairly be taken, having regard to the terms of the Board's Standing Orders, previously quoted.

The second ballot gave the results above indicated, and as there were fifty-one members of the Board present at the time it will be seen that all the candidates except Mr. Spiers received less than 20 per cent. of the total number of votes, and so Mr. Spiers was declared to be duly elected.

AWARDS AT THE ADELAIDE EXHIBITION.

The following are among the awards which have been made to exhibitors at the Adelaide Jubilee Exhibition. The order of merit gained is indicated by the figures in parentheses, the first order being notified by 1, the second order by 2, and the third order by 3:—

John Hall & Co., Stourbridge, glazed bricks, white and coloured, firebricks, &c. (1).

J. Cowan & Son, Blaydon-on-Tyne, fireclay, gas retorts, and firebricks (1).

Maw & Co., Shropshire, encaustic tiles (1).

Godwin & Son, Withington, near Hereford, encaustic and other tiles (1).

Webb's Worcester Tileries Company, Worcester, window and other glass (1).

Mark Abrahams, Wormwood-street, London, Hayward's patent prism lights (1).

H. A. Cawkwell, High-street, Malvern, mosaic and encaustic tiles (1).

Ashton & Green (Limited), tiles for pavement (2).

E. Smith & Co., Coalville, Leicestershire, ornamental wall and floor tiles (1).

Maw & Co., Shropshire, majolica vases and plates (1).

Belleek Pottery Co., Belleek, Ireland, china, Parian, and earthenware (1).

Watcombe Pottery Co., Devon, terra-cotta ornaments (2).

E. J. D. Bodley, London, chinaware (2).

Adderley & Lawson, Stoke-on-Trent, china and earthenware (3).

The Plastic Decoration and Papier Mâché Co., 21, Wellington-street, Strand, London, fibrous plaster, carton-pierre, and papier-mâché ornaments (1).

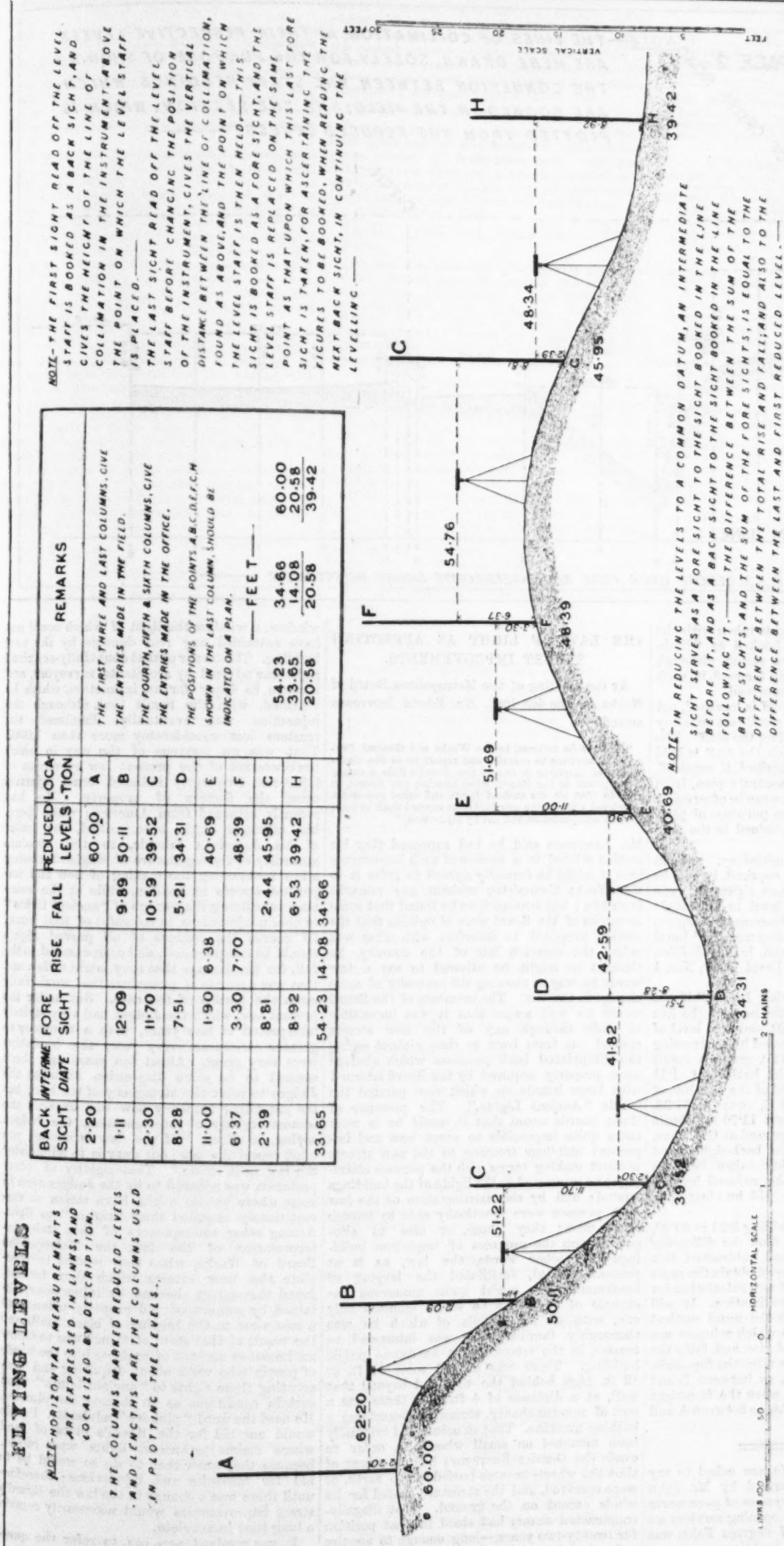
Hayward Tyler & Co., Whitecross-street, London, steam pumps (1).

F. W. Reynolds & Co., Acorn Works, Edward-street, Blackfriars-road, London, wood-working machinery (1).

The Registration of Plumbers in Manchester.—A meeting of the District Council recently formed for the promotion of the registration of plumbers was held last week at the offices of Mr. Fred. Scott, 100, King-street. Mr. William Jaffrey was asked to take the chair, and there were also present nineteen members of the Council, representing master plumbers, operatives, and the public. On the motion of Mr. Jaffrey, seconded by Mr. M. Ingram, Mr. John Holden, F.R.I.B.A., was appointed Chairman of the Council, and thereupon Mr. Jaffrey vacated the chair for him. A communication from the Plumbers' Company of London, offering guidance to the local Council in organising, and containing a statement of the conditions of registration at present enforced by the London Company, was read. A Sub-committee, including representatives of operatives and masters, was appointed to collect information and draft rules.

* See *Builder*, Feb. 5, 1887, p. 216.

† This information was, for the first time, printed on the cards distributed amongst the Members of the Board, but does not appear to have influenced the voting so much as might have been expected.


FLYING LEVELS
NOTE-HORIZONTAL MEASUREMENTS ARE EXPRESSED IN LINKS, AND LOCALIZED BY DESCRIPTION.
THE COLUMNS MARKED REDUCED LEVELS AND LENGTHS ARE THE COLUMNS USED IN PLOTTING THE LEVELS.
NOTE- THE FIRST SIGHT READ OFF THE LEVEL STAFF IS BOOKED AS A BACK SIGHT, AND GIVES THE HEIGHT OF THE LINE OF COLLIMATION IN THE INSTRUMENT, ABOVE THE POINT ON WHICH THE LEVEL STAFF IS PLACED.—
THE LAST SIGHT READ OFF THE LEVEL STAFF BEFORE CHANGING THE POSITION OF THE INSTRUMENT, GIVES THE VERTICAL DISTANCE BETWEEN THE LINE OF COLLIMATION, FOUND AS ABOVE, AND THE POINT ON WHICH THE LEVEL STAFF IS THEN HELD.— THIS SIGHT IS BOOKED AS A FORE SIGHT, AND THE LEVEL STAFF IS REPLACED ON THE SAME POINT AS THAT UPON WHICH THIS LAST FORE SIGHT IS TAKEN, FOR ASCERTAINING THE FIGURES TO BE BOOKED, WHEN READING THE NEXT BACK SIGHT, IN CONTINUING THE LEVELLING.—
NOTE- IN REDUCING THE LEVELS TO A COMMON DATUM, AN INTERMEDIATE SIGHT SERVES AS A FORE SIGHT TO THE SIGHT BOOKED IN THE LINE BEFORE IT, AND AS A BACK SIGHT TO THE SIGHT BOOKED IN THE LINE FOLLOWING IT.— THE DIFFERENCE BETWEEN THE SUM OF THE BACK SIGHTS, AND THE SUM OF THE FORE SIGHTS, IS EQUAL TO THE DIFFERENCE BETWEEN THE TOTAL RISE AND FALL; AND ALSO TO THE DIFFERENCE BETWEEN THE LAST AND FIRST REDUCED LEVEL.—
VERTICAL SCALE
FEET
HORIZONTAL SCALE
LINKS
CHAINS
A
B
C
D
E
F
H
60·00
62·20
50·11
51·22
39·52
42·59
41·82
34·31
40·69
51·69
48·39
54·76
45·95
48·34
39·42

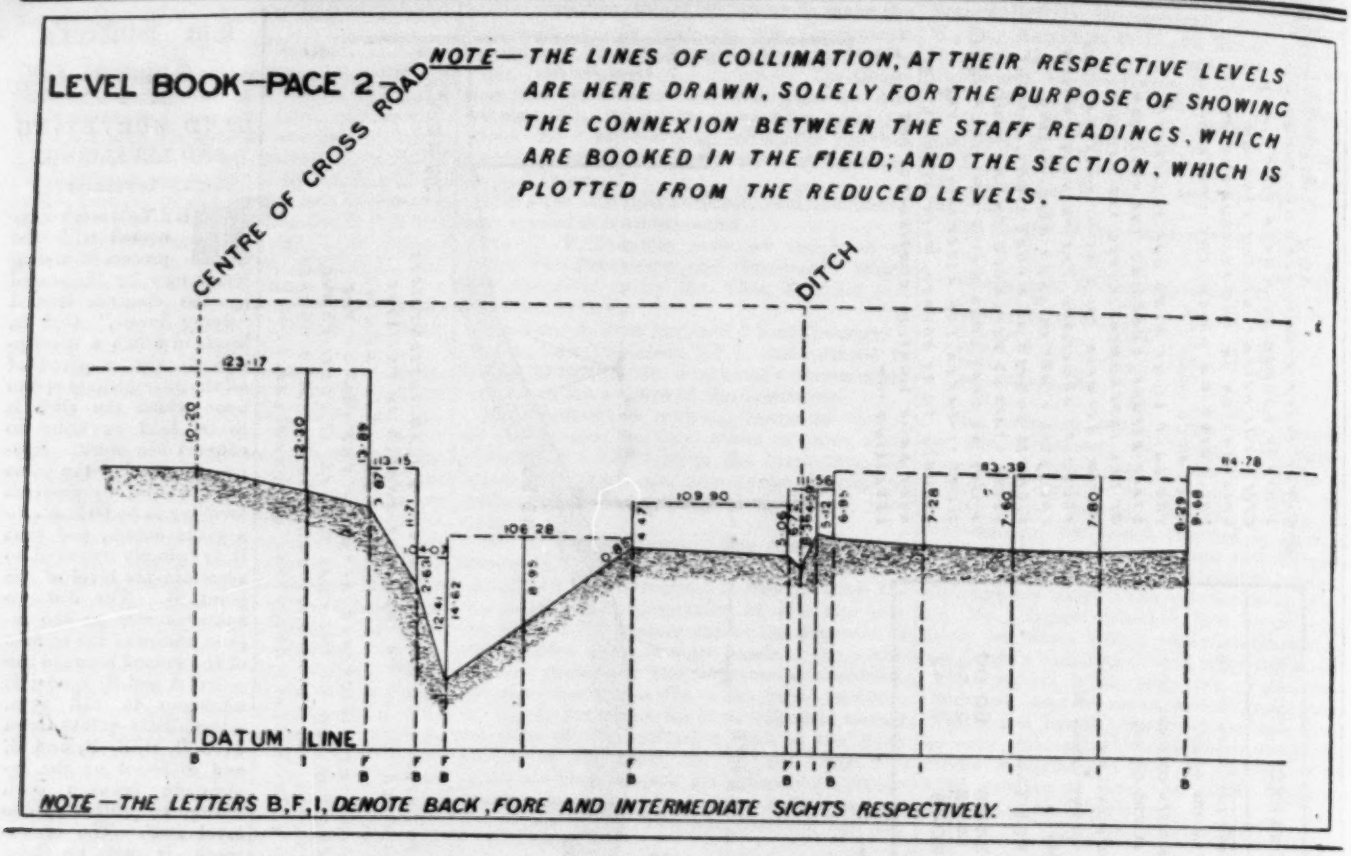
REMARKS	BACK SIGHT	INTERMEDIATE	FORE SIGHT	RISE	FALL	REDUCED LEVELS	LOCATION
THE FIRST THREE AND LAST COLUMNS, GIVE THE ENTRIES MADE IN THE FIELD.	2·20					60·00	A
	1·11		12·09		9·89	50·11	B
THE FOURTH, FIFTH & SIXTH COLUMNS, GIVE THE ENTRIES MADE IN THE OFFICE.	2·30		11·70		10·59	39·52	C
	8·28		7·51		5·21	34·31	D
THE POSITIONS OF THE POINTS A B C D E F G H SHOWN IN THE LAST COLUMN, SHOULD BE INDICATED ON A PLAN.	11·00		1·90	6·38		40·69	E
	6·37		3·30	7·70		48·39	F
	2·39		8·81		2·44	45·95	G
			8·92		6·53	39·42	H
	33·65		54·23	14·08	34·66		
	— FEET —		34·66	14·08	20·58		
			54·23	33·65	20·58		

The Student's Column.

LAND SURVEYING AND LEVELLING.

XX.—LEVELLING.

THE field work connected with the process of taking levels may be illustrated by the diagram headed "flying levels," that is, levels in which a description is not required of *all* the intermediate points upon which the staff is to be held in order to connect the work. Suppose the level of the point A is known by previous levelling to be 60 ft. above a given datum, and that it is simply required to ascertain the level of the point H. The distance apart, as well as the uneven nature of the surface of the ground between the points A and H, render it necessary to call upon intermediate points, such as B, C, D, E, F, and G, and to re-set up the instrument between each change of position in the level staff. The instrument is set up level between A and B; the staff is placed upon A, and found to read 2·20. This is booked as a *back-sight*, because we are looking back upon a point the level of which is already known. The telescope is then revolved horizontally; the staffman is directed to move forward to B, or to a point where the observer can read as great a height upon the staff as possible, owing to the falling inclination of the ground. The staff at B is booked as a *fore-sight*, because the observer is here looking forward to a point the level of which he does not yet know. Having read B he then moves the instrument forward, while the staffman is entrusted to maintain the foot of the level-staff very carefully upon the point B. To assist the staffman in so doing he generally employs a foot-plate or iron peg (*Builder*, May 7th, p. 686), and waves the staff upon it to and from the telescope, over a vertical line as there shown (fig. 6) when the observer is reading the divisions. With the instrument in the new position between B and C, placed so as to read as low down as practicable upon the staff, the sight 1·11 is then read. This is booked as a back-sight, because when the level book is reduced, the level of the point B can be arrived at before the sight 1·11 is considered. Suppose the ground to be such that the instrument is placed upon the left hand of A, when the sights 2·20 and 12·09 are read, or upon the left hand of B, when 1·11 and 11·70 are read with the telescope pointing in the


LEVEL BOOK—PAGE 2
NOTE—THE LINES OF COLLIMATION, AT THEIR RESPECTIVE LEVELS ARE HERE DRAWN, SOLELY FOR THE PURPOSE OF SHOWING THE CONNEXION BETWEEN THE STAFF READINGS, WHICH ARE BOOKED IN THE FIELD; AND THE SECTION, WHICH IS PLOTTED FROM THE REDUCED LEVELS.
CENTRE OF CROSS ROAD
DITCH
DATUM LINE
NOTE—THE LETTERS B, F, I, DENOTE BACK, FORE AND INTERMEDIATE SIGHTS RESPECTIVELY.

same direction. The first sights taken with the instruments would still be booked as "back-sights" for the reason above stated, although the observer would be looking forward, in each case, so far as direction is concerned.

The position of the level staff is localised, not that of the level. The level is simply set up in any convenient position for reading the staff. The intermediate spots upon which the staff is held between A and H can be described, if required, by letters referring to an accurate plan, from which the horizontal distances can be afterwards measured with a scale for the purposes of plotting, or the whole can be chained in the field as a section.

Where the ground is undulatory, and an accurate vertical section is required, it will be found necessary to take some sights between the first and last, with the level in any single position. These are called intermediate sights, and the entries for the diagram of "Level Book," page 2, will be found in the *Builder*, May 14, p. 734, Forms of Level Book, Nos. 1 and 4.

In the diagram of "Flying Levels," if the back-sight at A reads 2·20, the level of the line of collimation would be 62·20, and the level of the ground at B would be found by subtracting the fore-sight 12·09 from 62·20, giving a result of 50·11. Again, adding the back-sight, 1·11 to 50·11, we obtain the level of the new line of collimation between B and C, equal to 51·22, and subtracting the fore-sight 11·70 we obtain 39·52 as the level of the ground at C. Thus, by continuously adding the back-sights and subtracting the fore-sights taken between A and H, we may obtain the reduced level of the point H as 39·42. This will be clear upon reference to the diagram.

Now, if instead of first adding 2·20 to 60·00, and subtracting 12·09, we took the difference between 2·20 and 12·09 and subtracted this difference from 60·00, we should obtain the same result, 50·11, independent of any calculation for the level of the line of collimation. It will be seen that this is exactly the usual method adopted in a level book, in which columns are provided for the amounts of rise and fall; the difference constituting *a rise* when the fore-sight is less than the back-sight, as between D and C, or E and F; or *a fall* when the fore-sight is greater than the back-sight, as between A and B, or C and D.

Truro Cathedral.—We are asked to say that this cathedral is warmed by Mr. John Grandy's patent combined system of pure warm air and hot water. At the opening services an equable temperature of 57 degrees Fahr. was maintained throughout the building.

THE LAW OF LIGHT AS AFFECTING STREET IMPROVEMENTS.

At the meeting of the Metropolitan Board of Works on the 4th inst., Mr. Edwin Lawrence moved:—

"That it be referred to the Works and General Purposes Committee to consider and report as to the desirability of inserting in one of the Board's Bills a clause giving power to the Board, when forming new streets, to provide that all the ancient lights and other easements interfered with by the new buildings erected shall be dealt with by compensation and not by injunction."

Mr. Lawrence said he had supposed that his motion related to a matter of such importance that it might be formally agreed to refer it to the Works Committee without any remarks from him; but inasmuch as he found that some members of the Board were of opinion that the motion proposed to interfere with what was called the common law of the country, he thought he might be allowed to say a few words by way of showing the necessity of some change in the law. The members of the Board would be well aware that it was impossible to walk through any of the new streets opened out from time to time without seeing the dilapidated back premises which abutted upon property acquired by the Board adorned with large boards on which were painted the words "Ancient Lights." The presence of those boards meant that it would be in most cases quite impossible to erect new and important buildings fronting to the new streets without making terms with the persons claiming to be interested in the lights of the buildings behind; and by the existing state of the law such persons were practically able to impose what terms they chose, or else to altogether stop the progress of important buildings; in other words, the law, as it at present existed, facilitated the levying of blackmail. He might quote numerous instances of that, but he would mention only one, with all the details of which he was thoroughly familiar. He was interested, as trustee, in the erection of a handsome public building. There was a wall some 11 ft. or 12 ft. high behind the site, and beyond that wall, at a distance of 4 ft. 6in., there was a sort of wooden shanty, somewhat resembling a bathing-machine. That structure had originally been mounted on small wheels, in order to evade the District Surveyor; but in course of time the wheels became buried in the earth, or were removed, and the structure rested for its whole extent on the ground. That illegally-constructed shanty had stood in that position for twenty-two years,—long enough to acquire a legal right to light in respect of a small window, a window the light of which could not have sustained any real damage by the new building. The owner of that doubtfully-acquired right was advised by architects, surveyors, and lawyers to apply for an injunction, which he obtained, with the result that, although the injunction was eventually dismissed, the trustees lost considerably more than 1,000*l*. That was an instance of the way in which the operation of the present law by means of injunction frequently inflicted cruel injustice upon the owners of property. He had recently returned from America; while there, his attention had been called, by some of his American friends, to the absolute absurdity of the legislature of England passing a law sanctioning the making of new and important streets in London, while at the same time permitting the owners of "ancient lights" to obtain injunctions in restraint of that work. Of course the owners of all proved rights should be compensated, and compensated to the full, for the damage that they might suffer, and that was a course of procedure that would fully meet the justice of the case. But under the present law, which the Judges had very strictly interpreted of late years, with a tendency to greater strictness every year, the hardships were very great. About ten years ago there seemed to be some disposition amongst the Judges to relax the stringency of the law; but the prevailing tendency now was towards the utmost rigidity of interpretation, the Judges saying, in effect, "If the law is wrong, you must repeal the law; our duty is to administer the law as it exists." That rigidity of interpretation was adhered to by the Judges even in cases where people might have stolen or surreptitiously acquired their "rights" to light. Among other consequences of that strict interpretation of the law, the Metropolitan Board of Works, when they wished to complete the new streets which they formed, found themselves checked by injunctions obtained by owners of old property often with a sole view to the levying of black mail, and the result of that state of things was to throw an immense amount of business into the hands of people who went about acquiring and prosecuting these rights to "ancient lights" upon certain conditions as to sharing the plunder. He used the word "plunder" advisedly. People would not bid for the Board's plots of land where claims to ancient lights were raised, because they knew that to do so would be to bid for law-suits and injunctions; therefore until there was a change in the law the Board's street improvements would necessarily remain a long time incomplete.

It was resolved *nem. con.* to refer the question to the Works Committee.

"ST. AUGUSTINE."

SIR,—In your article on the restoration of the Great Screen of St. Alban's, published October 29th, you speak of *Saint* Augustine. May I say that Mr. Surtees has, I believe, conclusively proved the prefix of "saint," when applied to the famous apostle, to be incorrect. I quote the following, in support of my assertion, from his essay in the *Journal of the Archæological Association*, pp. 295–6, vol. xl. :—

"A not uncommon error amongst archæologists is to write and speak of Augustine, the monk archbishop of Canterbury . . . . as *Saint* Augustine, a title of canonisation which alone of the two Augustines should belong to St. Augustine, the Father and Bishop of Nippo, who died 430 A.D., and to whom, by common, universal consent, it has been invariably given. . . . . Churches undoubtedly have been, and are being, occasionally dedicated to Augustine of Canterbury as *Saint* Augustine. . . . . We find Fuller, Southey, and the best writers on English Church history terming him *Augustine* only. . . . .

Wheatly, in the calendar for the month of March, when naming Pope Gregory, has observed that his memory was celebrated in England for sending 'Austin the monk [not St. Austin], with forty other missionaries, to convert the Saxons. . . . . Proceeding next to Wheatly's calendar for the month of August, 28th of that month, we find he thus writes:—'*Saint* Augustine (that is, the Father and author) was born at Togaste, a town in Numidia, in Africa, in the year 354.' . . . .

But, further, if additional authority is wanted, we need only turn to the calendar prefixed to our Prayer-Book; thus, in the latest edition, we find:—'May 26. Augustine, Archbishop,' and 'August 28, Saint Augustine, Bishop.'"

H. LITTLEHALES.

Bexley Heath, Nov. 4.

KENDALL ROAD SCHOOLS, COLCHESTER.

SIR,—In accordance with an advertisement appearing in your last issue [p.x.], which "invites architects to send in plans for schools to accommodate 300 children, about to be erected in the Kendall-road, Colchester. Full particulars, with plan of ground, on application," I made application, and was duly favoured with a copy of the "full particulars," which I considered to be totally inadequate (evidently drafted by a novice) and insufficient to enable any one to prepare drawings with any degree of certainty as to what is really likely to suit, *two* very important points being omitted, the first of paramount importance, viz., the cost per head; not even the roughest approximation being volunteered, whether 5*l.* or 10*l.* per head. Second. Who is to be the judge of the merits of the drawings sent in, and as to their being in accordance with the requirements of the Education Department? Further than this, it is not stated whether the premiated design may, or may not, be rewarded with a handsome bonus of 10*l.*, or whether its contributor may get the work at the usual 5 per cent., and 2½ per cent. for quantities? It is to be hoped the persons who can afford to throw away time and money on such a speculation will be rewarded.

ONE WHO DECLINES, WITH THANKS.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

15,759, Heating Apparatus. R. P. de Ridder and W. Bennett.

This invention relates to the "small bore" system of hot-water pipes, and the improvements are in the direction of providing for the escape of air or steam if any should be generated in the pipes, or should the pressure rise too high for safety. An expansion tube, in combination with a heating pipe, is placed at the highest point of the heating pipe, and safety-valves of special construction whereby air and not steam or water is allowed to escape are used. By the use of a relief valve the pressure can be regulated as desired.

3,256, Covering for Roofs. G. F. Jefferey.

In some roof coverings in common use felted material is used, but this is liable to the inconvenience that when once laid, and after short exposure to the weather, it is difficult to remove the covering intact, so as to be equally serviceable in other places. The present invention is designed to obviate this defect. A fabric of jute is dressed with filling (a mixture of drying oil and white lead or chalk); a second coating is applied to the outside surface, and the covering is ready for use.

7,846, Dovetailing Machines. J. Anderson.

Upon a suitable frame or stand are mounted three or more horizontal spindles in adjustable bearings, capable of being placed any desired distance apart, and having cutters fixed at either end, and driven from a suitable countershaft. On each side of the main frame or stand is fitted in vertical slides a bracket, carrying a table upon horizontal slides, upon which the wood is secured. Beneath this is a rotating shaft carrying suitable cams, giving motion to the brackets, and lateral motion to the table, so that as the wood rises to the cutters, the desired angle is obtained to form the pin or tenon on the one piece, and on the other piece the holes or tails formed by the corresponding cutters. Dovetails of any space and size can be made.

11,787, Cupboard Turn. E. V. Bailey.

Instead of making the turn in a single piece, it is (according to this invention) made in two parts, jointed at their outer ends; one part is screwed, the other has a square gap at its end. The first is screwed on, and then the second piece turned back, so that it locks and fixes the turn on the square screwed spindle.

12,031, Paints and Compounds. H. J. Allison.

This invention consists in grinding the pigments with oil obtained from the germs of Indian corn or maize, instead of linseed oil. It is claimed that the colours are more permanent, work much smoother, do not "chalk" or scale, and that the paints are cheaper. Dryers are mixed when found necessary, but corn oil has in itself considerable drying properties.

NEW APPLICATIONS FOR PATENTS.

Oct. 28.—14,663, P. Monro, Guides for Band-saw Blades.—14,686, A. Crossley, Refractory Bricks for Lining Furnaces, &c.

Oct. 29.—14,716, A. Hopkins, Fastening and Securing Wood-block Flooring, &c.—14,734, S. Carnaby, Opening and Closing Balanced Windows, Ventilators, &c.

Oct. 31.—14,776, S. Timings and S. Hill, Spring Catches or Fasteners for Doors or Windows.

Nov. 1.—14,847, B. and C. Townend, Preventing Draughts under Door-bottoms.—14,851, J. Coulter, Stone-dressing Machinery.—14,881, D. Nicholl, Construction of Temporary Structures.—14,897, P. Von Krystoffovitch, Artificial Granite.

Nov. 2.—14,955, D. Bostel, Syphon Flushing Cisterns.

Nov. 3.—14,973, P. Justice, Ventilating Buildings, &c.—15,002, H. Reinicke, Ventilating Closets.—15,008, W. Brandt, Fireproof Compositions, &c.

PROVISIONAL SPECIFICATIONS ACCEPTED.

12,291, W. Fraser, Automatic Door Closer and Check.—12,473, A. Harrison, Wood-block Flooring.—12,691, L. Chinnery, Window-sash Silencer.—13,675, T. Potter, Door Checks.—13,680, J. Season, Construction of Roofs.—13,692, J. Miller, Extinction of Fires in Theatres, &c.—13,826, C. Smith, Flush Cistern Appliances for Closets.—13,786, T. Helliwell, Fixing and Securing Sheets of Glass, Zinc, Slate, &c., to Roofs, Flats, or Sides of Railway Stations, Greenhouses, &c.—13,856, A. Heath, Securing Knobs to Spindles.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

14,934, T. Cooke and W. Boyens, Raising, Lowering, and Holding in Position Sliding Windows or Sashes.—424, W. White, Roads and Pavements, and Paving Blocks for same.—609, G. Brodie and J. Prior, Firegrates.—12,632, J. Lyman, Waterproof Compositions or Paints.—16,809, E. Hughes, Circular-saw Benches.—16,956, W. Stevens, Ventilating and Flushing Water-closets.—43, W. Marten, Domestic Firegrates.—4,046, P. Chinnery, Window Fasteners.—11,283, W. Bull, Roofing Tiles, &c.—12,307, J. Peckover, Saws and Machinery for Sawing Stone.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

SEPTEMBER 21.

By G. B. SMALLPEICE.

Woking—1, Chertsey-road, freehold	£450
11, Chertsey-road, The Temperance Hotel	600
Goldworth-road—Six freehold villa residences	1,375

OCTOBER 13.

By WORSFOLD & HAYWARD.

Ringwould, Kent—Two freehold houses	305
A plot of freehold land, 3a. 0r. 39p.	501
Three plots of land	103

OCTOBER 25.

By P. D. TUCKETT & Co.
(At Kingston.)

Kingston—Eleven plots of freehold land	874

OCTOBER 31.

By CHADWICK & SONS.

High Holborn—No. 195, freehold	2,280
Paddington—32 and 67, Amberley-road, 75 years, ground-rent 13*l.*	790
Clapham—97, Grandison-road, 96 years, ground-rent 6*l.* 10*s.*	225

By Mr. DEAN.

Clerkenwell—3 to 7 and 15, Spa Cottages, 23 years, ground-rent 24*l.*	740

By PROTHEROE & MORRIS.

Buckhurst Hill—Three freehold plots of land	156

NOVEMBER 1.

By A. RICHARDS.

Westminster—22, 24, and 26, Ponsonby-terrace, 43 years, ground-rent 18*l.*	1,030
28A, Ponsonby-place, and 3, Rochampton-street, 43 years, ground-rent 10*l.*	670
Tottenham—7, 8, and 9, Williams-place, freehold	355
Edmonton—1, Adelaide-place, 62 years, ground-rent 2*l.* 10*s.*	125

By E. & H. LUMLEY.

Regent-street—8, Carnaby-street, freehold	1,620

By F. HARDS.

Blackheath, Humber-road—The Chestnuts, freehold	£1,490
East Greenwich—19, Edward-street, freehold	390
Peckham—48, 50, 52, and 56, Dennett's-road, freehold	1,275

By SEDGWICK, SON, & WELL.

Bushey, Herts—The Horse and Chains, freehold beer-house	770
Four freehold cottages	385
Harrow—Two plots of freehold land	77

NOVEMBER 2.

By HUMPHREYS, SKITT, & HUMPHREYS.

Lewisham—13 and 15, Molesworth-road, 74 years, ground-rent 5*l.* 14*s.*	350
Millbrook, Hants—The residence Roselands, and 14 acres, term 74 years, subject to the Lives of the Prince of Wales and the Duke of Edinburgh, also a Policy for 1,500*l.*, subject to the said lives	1,190

By TEMPLE & MOORE.

Stepney Green—No. 96, freehold	315
Old Ford—37 and 39, Auckland-road, freehold	765
14 and 16, Chisenhale-road	205
Ground-rent of 20*l.*, reversion in 78 years	445
Milton, next Gravesend—1 to 7, Elizabeth-terrace, freehold	280
Sevenoaks, near—A plot of freehold land, 1a. 0r. 21p.	180
Windsor, Clewer Green—1 and 2, Prospect Cottages, freehold	810
A cottage, and 10a. 2r. 4p. freehold	1,200

By C. A. RICHARDS.

Weeley, Essex—Four cottages, and a plot of land	420
The freehold residence, Mount Pleasant, and 8a. 1r. 7p.	800
Two enclosures of land, 4a. 3r. 4p., freehold	210
Thorpe-le-Soken—Two enclosures of land, 4a. 1r. 18p.	200
Mile End-road—No. 307, 80 years, ground-rent 7*l.*	400
Tulse Hill—4, 5, and 8, Park Villas, freehold	1,300

By R. TIDEY & SON.

Mile End—62 and 64, Sceptre-street, 28 years, ground-rent 7*l.* 10*s.*	120

NOVEMBER 3.

By ROBINSON & RUDKIN.

St. Luke's—Ground-rent of 5*l.* 10*s.* reversion in 30 years	180
Islington—Ground-rent of 21*l.* 12*s.*, reversion in 40 years	500
Ground-rent of 4*l.*, reversion in 32 years	125
Ground-rent of 8*l.* 8*s.*, reversion in 34 years	215
Ground-rent of 6*l.*, reversion in 24 years	320
Ground-rent of 9*l.*, reversion in 33 years	300
Ground-rent of 5*l.* reversion in 40 years	140
Holloway—4 and 4½, Grove-street, freehold	500
79, Eden Grove, 80 years, ground-rent 3*l.* 3*s.*	160

By WALTON & LEE.

Chester-square—No. 29, term 34 years, ground-rent 36*l.*	3,500
35, Royal Oak Mews, 34 years, no ground-rent	475

By NEWBON & HARDING.

Islington—10, Colebrook-row, 28 years, ground-rent 10*l.* 10*s.*	375
Stoke Newington—62, Lordship-road, 66 years, ground-rent 8*l.*	360
66, 68, and 70, Lordship-road, 66 years, ground-rent 24*l.*	1,020
Hornsey-road—107, 109, and 111, Corbyn-street, 83 years, ground-rent 18*l.* 18*s.*	730
135, Corbyn-street, 83 years, ground-rent 6*l.* 6*s.*	240
148 and 152, Thorpedale-road, 83 years, ground-rent 11*l.* 5*s.*	415
Stoke Newington—24, Woodlea-road, 86 years, ground-rent 5*l.* 10*s.*	225

By ROBERT BOYCE.

Bethnal Green—26 and 27, Morpeth-street, 54 years, ground-rent 6*l.*	575
Old Ford-road—No. 107, term 66 years, ground-rent 6*l.* 10*s.*	360
Bethnal Green-road—129, Canrobert-street, 64 years, ground-rent 2*l.* 15*s.*	150

By P. D. TUCKETT & Co.

Forest Gate, The Plashet Hall Estate—Eighty-three plots of freehold land	3,244

NOVEMBER 4.

By WESTON & SON.

Stockwell—26, 28, and 30, Edithna-street, 87 years, ground-rent 15*l.*	645
Brixton—105, Loughborough Park, 35 years, ground-rent 7*l.*	350

By W. HALL.

Cheshunt—1 and 2, Victoria Cottages, copyhold	200

The Society of Arts.—The first meeting of the one-hundred-and-thirty-fourth session of the Society of Arts will be held on Wednesday, the 16th of November, when the opening address will be delivered by Sir Douglas Galton, K.C.B., D.C.L., LL.D., F.R.S., Chairman of the Council. Previous to Christmas there will be four ordinary meetings in addition to the opening meeting. During the session there will be six courses of Cantor lectures, including "The Elements of Architectural Design," by H. H. Statham; "The Modern Microscope" (being a continuation of the recent course of Cantor lectures on the "Microscope"), by John Mayall, Jun.; "Alloys," by Prof. W. Chandler Roberts-Austen, F.R.S.; and "The Decoration and Illustration of Books," by Walter Crane.

Destruction of an Ancient Castle by Fire.—Last week the famous Polish castle belonging to Prince Gartoryski, near Cracow, was totally detroyed by fire. The building,—one of the finest in Poland,—dated from the sixteenth century. The fire, which originated in the Prince's bedroom, destroyed the valuable library, the collection of paintings, and many other costly works of art.

MEETINGS.

MONDAY, NOVEMBER 14.

Surveyors' Institution.—The President, Mr. W. J. Beadel, M.P., will deliver the opening address of the Session. 8 p.m.

Leeds and Yorkshire Architectural Society.—Mr. Basil Champneys on "Victorian Architecture and Originality." 7·30 p.m.

TUESDAY, NOVEMBER 15.

Institution of Civil Engineers.—Sir F. A. Abel, C.B., F.R.S., on "Accidents in Mines," II. 8 p.m.

Manchester Architectural Association.—Mr. J. Corbett on "House Water Fittings." 7·30 p.m.

WEDNESDAY, NOVEMBER 16.

Society of Arts.—Sir Douglas Galton, K.C.B., F.R.S., Chairman of the Council, will deliver the opening address of the Session. 8 p.m.

British Archæological Association.—(1) The President, Sir James A. Picton, F.S.A., F.R.I.B.A., on "The City Walls of Chester." (2) *Résumé* of the Session 1886-87, by Mr. T. Morgan, F.S.A. 8 p.m.

Royal Meteorological Society.—7 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting. 8·30 p.m.

Liverpool Engineering Society.—A special General Meeting to consider alteration of rules. 7·30 p.m.

THURSDAY, NOVEMBER 17.

Parkes Museum of Hygiene.—The Earl of Meath on "The Importance of Open Spaces." 5 p.m.

Royal Engineers' Institute, Chatham.—Mr. F. R. Conder, on "Treatment of Sewage by the Iron Process, as used at Chichester Barracks and Windsor Castle." 5·30 p.m.

FRIDAY, NOVEMBER 18.

Architectural Association.—Mr. H. D. Appleton on "Our Sketching Club Scheme." 7·30 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. John Holliday on "Boiler Experiments and Fuel Economy." 7·30 p.m.

Miscellanea.

Birmingham Architectural Association. On the 4th inst. the opening *conversazione* of this Association for the present session was held in the Assembly Rooms, Edgbaston. About 500 ladies and gentlemen attended. The Association, as many of our readers know, is the only provincial society affiliated with the Architectural Association of London. Drawings, &c., were lent by Messrs. Aston Webb, W. H. Bidlake, W. Millard, F. Evans, Osborn & Reading, Henman & Timmins, Proud & Faulkner, Essex & Nicol, D. Arkell, Dunn & Hipkiss, J. J. Bateman, J. Cotton, J. A. Chatwin, V. Scruton, George & Peto, T. W. F. Newton, W. Hale, Hawley Lloyd, H. Naden, W. Lethaby, Phené Spiers, M. J. Landsell, Ingall & Son, J. P. Osborne, R. W. Edis, J. A. Cossins, J. Brooks, J. Douglas, E. J. May, A. Lee, J. Oldrid Scott, Freeman Smith, A. B. Phipson, Crouch & Butler, Wood & Kendrick, and C. E. Bateman. Mr. Harold Baker lent a collection of photographs. Amongst the visitors present were Mr. W. Kenrick, M.P., Mr. G. Dixon, M.P., Mr. Jesse Collings, M.P., Mr. L. Tait, Mr. Malins, Mr. Tilden, Professor Smith, Professor Hillhouse (Mason College), the Rev. R. L. Porter, the Rev. J. Wood, the Rev. F. Williams, Mr. B. Windle, T. Bunce, R. F. Martineau, H. Rogers, W. Player, J. R. Holliday, Major Brooks, Col. Tarte, Mr. J. Hardman, &c. Apologies for non-attendance were received from Sir T. Martineau (Mayor), Mr. R. Chamberlain, M.P., the Right Hon. J. Chamberlain, M.P., Sir James Sawyer, Mr. Dale, Rev. Canon Bowlby, the Rt. Hon. R. W. Lyttleton, Mr. S. Timmins, Mr. T. Pratt, Messrs. A. Webb, E. I. Bell, J. D. Mullins, W. S. Till, J. H. Shorthouse, L. Smith, &c., and from the President of the Royal Institute of British Architects and the Presidents of seven other architectural societies.

The Public Library, Edinburgh.—Estimates for the erection of the Public Library Buildings, in Edinburgh, have been accepted. They amount to 19,385*l.*, which is 4,000*l.* or 5,000*l.* less than was anticipated. This leaves a margin of 10,000*l.* for furnishing, electric lighting, &c. The plans submitted by Mr. Washington Browne, which secured the first premium in the competition, have been altered to some extent both as regards the exterior elevations and internal arrangement. These alterations are considered as decided improvements and as giving enhanced value to the exterior, which has been raised 2 ft. in height, the projecting wing to the north now having its cornice on a level with the rest of the elevation. The high-pitched roof over the main building has also been heightened, the lantern at its summit being now 10 ft. higher than before. The total height from the level of George IV. Bridge will now be 118 ft. An alteration has also been effected on the principal doorway, which is now the centre of three equal arches, and a fourth arch has been repeated in the large window of the projecting

g.

Conference on Technical Instruction.—An exceedingly interesting and important conference was held on Saturday evening at the Finsbury Technical College, to discuss the question of technical education, particularly as it affects the apprenticeship system. Mr. J. Rowlands, M.P., presided. Professor Silvanus P. Thompson (Principal of the City and Guilds of London Institute) opened the discussion with a paper on "The Present Position of the Technical Instruction Question." He referred to numerous institutions in the metropolis and the provinces wherein educational work of a technical character was going on, especially alluding to the group of agencies now established by the City and Guilds of London Institute, and contrasted the great efforts which were being made on the Continent to promote technical instruction with what had been done in this country. With regard to the future organisation of technical instruction, he contended that the Science and Art Department did not understand its first principles, and did not comprehend that the adaptation of the teaching to local wants and the adaptation of the design to the material were the very essence of technical instruction. The friends of the technical education movement might congratulate themselves that the Technical Instruction Bill of last Session was withdrawn before it reached Committee. The first and most important point of all for the national organisation of technical instruction was to secure the creation of a real Education Department under a real Minister of Education. We have some notes of the discussion which followed, but owing to pressure on our space we cannot give them this week. Mr. Owen Roberts (Clerk to the Clothworkers' Company) said that at a meeting of the Court of that Company a few days ago, a decision was come to to turn all the scholarships given by that Company to the London School Board into technical scholarships.

The Late Mr. Hew M. Wardrop.—We regret to hear of the death of this young Edinburgh architect, which took place at Udny Castle, Aberdeenshire, on the 4th inst. Mr. Hew Montgomery Wardrop was the second son of the late Mr. Maitland Wardrop, of the firm of Wardrop & Reid, architects. He received his early training as an architect in his father's office, and he was for some time thereafter an assistant to Mr. G. E. Street. He spent a year or two also abroad in the study of the great cathedrals of the Continent, and he was in the colonies also for a time on account of his health, which was never robust. On the death of his father, four or five years ago, he took his place in the business. Mr. Reid dying shortly thereafter, new arrangements were made, and the firm was merged in that of Wardrop, Anderson, & Browne. Subsequently it became Wardrop & Anderson,—the senior partner being Dr. Rowand Anderson. Mr. Wardrop, who was only thirty-one years of age, had a very extensive county connexion, and had designed or carried out the restoration of several mansion-houses in various parts of the country. Among these may be mentioned Tillyfour House, Aberdeenshire; Pitmedden House, Aberdeenshire; Ballochmyle, Ayrshire; and Hoddam Castle.

Society of Engineers.—At a meeting of the Society of Engineers, held at Westminster Town-hall, on Monday evening, November 7th, Professor Henry Robinson (President) in the chair, a paper was read by Mr. Perry F. Nursey (Past-President), on "Primary Batteries for Illuminating Purposes." The author commenced by observing that there was a wide field open for electric lighting by primary batteries in houses generally, owing to the costliness of the steam-driven dynamo-electric systems. He then explained the principles of the primary battery, and outlined its history; after which he laid down the leading conditions which should obtain in a battery for electric lighting on a broad and general scale.

The Old Chelsea Vestry-hall has lately been externally renovated and re-decorated throughout. The contract has been carried out by Mr. W. H. McLachlan, of Berners-street, under the supervision of Mr. George Strachan, the Surveyor to the Vestry.

House, Palace Court, Bayswater.—Referring to our account of Mr. Fellows's House, Palace Court, Bayswater, we are asked to mention that the carving and sculpture is the work of of Mr. Gilbert Searle, of Walworth.

Inquests on Fires.—We consider that the powers which the coroner formerly possessed of holding inquests in cases of fire where no death occurred should be again restored to him. That he had this power in times past is certain; and, further, his power extended to the inquiry of other felonies, such as burglaries and prison breach. Hawkins, in his "Pleas of the Crown," contends that the power of the coroner in those cases was conferred upon him by statute (Edward I.), and was never expressly taken away from him. Some few years ago an attempt was made to establish the authority of coroners to hold inquests in cases of fire, but the question was settled by the leading case of "Regina *v.* Herford," in which Lord Chief Justice Cockburn, in delivering judgment, said: "We have the authority of three of the greatest writers who have expounded and illustrated the law of England for saying that the office of coroner with reference to felonies is limited to cases of homicide on view of the body." Again, Lord Cockburn stayed the coroner for Manchester, who had commenced an inquisition as to a fire, with this judgment: "As to the importance to the public that coroners should have the jurisdiction, there are two opinions. I express none. Some of the coroners in modern times have exercised this jurisdiction, some have not. If they are to exercise it in this and other felonies after the disuse of it for five or six centuries, let it be given them by the Legislature, and not revived by this court." The late Sir John Humphreys, coroner for East Middlesex, held an inquest at Hackney in respect of a fire where no life was lost. This he did at the special request of the churchwardens and inhabitants of the district, as fires were of such frequent occurrence. The case turned out to be one of arson, but the magistrates refused to reimburse the coroner for the expenses incurred in the holding of the inquest, on the ground that the said inquest was not legally held.—*Lancet.*

Decrease of the Iron Manufacture in France.—The influences supposed to operate by those who take a pessimist view of the state of British industries, will not find much support from the recent returns concerning French iron and steel trades and mining industries. The *Journal Officiel* brings the following statistics concerning French mines, &c., for 1885 and 1886:—The number of mines at work had sunk from 504 to 476, or a reduction of 28. Of 1,380 concessioned mines, therefore, only 904 were worked. Of the 476 which are worked only 204 yielded any profit. Two-thirds of the mines which are worked are collieries, and they employ nine-tenths of all the miners, and had an output of 19,500,000 tons of coal, 500,000 less than in 1884, and 2,000,000 less than in 1883. The selling price fell 60 c. as compared to the year before; still the selling price at the mines reached 11·73 f. per ton. The cost of getting fell 43 c. from that of 1884. The number of workpeople engaged was 111,500, nearly 10,000 fewer than in 1884, and 15,000 less than in 1883. There was an increase of output of 543,000 tons in 1886, against that of 1885. The decrease in the production of iron is remarkable. In 1883 it amounted to two million tons of manufactured iron and steel; in 1884, 1,872,000 tons of crude, and 1,380,000 tons of iron and steel; in 1885, the two quantities were 1,634,000 tons and 1,336,000 tons; and in 1886, 1,508,000 tons and 1,234,000 tons. The number of steam-engines working steadily increased, but for the most part in small factories and in agriculture, whilst those in large industrial establishments decreased. The number of steam vessels, curiously enough, has remained almost stationary, although, by the law of 1883, the State has paid to the commercial marine,—as premiums for registered bought vessels, for building new ones, and on cargo freights,—a sum of twenty-six million francs, not reckoning the regular subventions to post-steamers. Equally noteworthy is the fact that the number of locomotives on the railways had decreased from 9,241 to 9,150, although 1,461 kom. of new lines had been opened.—*Engineer.*

Liverpool Corporation Free Lectures.—Mr. MacBride, whose lectures on sculpture at the British Museum we have before referred to, has been giving a course of four lectures on sculpture at the Rotunda Lecture Hall in Liverpool, which have been, we learn from the Liverpool papers, very largly attended. Sir James Picton occupied the chair at the opening lecture.

PRICES CURRENT OF MATERIALS.

TIMBER.	£. s. d.	£. s. d.
Greenheart, B.G. ....ton	6 5 0	7 10 0
Teak, E.I. ....load	8 0 0	12 10 0
Sequoia, U.S. ....foot cube	0 2 3	0 3 0
Ash, Canada ....load	3 0 0	4 10 0
Birch ,, ...	2 0 0	3 10 0
Elm ,, ...	3 10 0	4 10 0
Fir, Dantsic, &c.	1 10 0	4 0 0
Oak ,, ...	2 10 0	4 10 0
Canada	3 0 0	6 0 0
Pine, Canada red	2 0 0	3 10 0
,, yellow	2 0 0	4 0 0
Lath, Dantsic ....fathom	3 0 0	5 0 0
St. Petersburg	4 0 0	5 10 0
Wainscot, Riga ....log	0 0 0	0 0 0
,, Odessa, crown....	2 10 0	3 0 0
Deals, Finland, 2nd and 1st...std.100	7 0 0	8 0 0
,, 4th and 3rd....	5 10 0	6 10 0
Riga	5 10 0	7 0 0
St. Petersburg, 1st yellow	8 10 0	13 0 0
,, 2nd ,, ...	7 0 0	8 0 0
,, white	6 10 0	8 10 0
Swedish	6 0 0	14 0 0
White Sea	0 0 0	0 0 0
Canada, Pine, 1st	16 0 0	24 0 0
,, ,, 2nd....	10 0 0	15 0 0
,, ,, 3rd, &c....	6 0 0	9 0 0
,, Spruce, 1st	8 0 0	9 0 0
,, ,, 3rd and 2nd	5 0 0	7 0 0
New Brunswick, &c....	5 0 0	6 10 0
Battens, all kinds	4 0 0	10 10 0
Flooring Boards, sq., 1 in., prepared, First	0 8 0	0 11 0
Second	0 6 6	0 7 6
Other qualities	0 4 0	0 6 0
Cedar, Cuba ....foot	0 0 3	0 0 3½
Honduras, &c.	0 0 2½	0 0 3½
Australian	0 0 2	0 0 3
Mahogany, Cuba	0 0 4½	0 0 7
St. Domingo, cargo average	0 0 4½	0 0 6
Mexican ,, ...	0 0 3	0 0 3½
Tobasco ,, ...	0 0 3½	0 0 5
Honduras ,, ...	0 0 3½	0 0 5

TIMBER (*continued*).	£. s. d.	£. s. d.
Maple, Bird's-eye	0 0 5	0 0 7
Rose, Rio ....ton	8 0 0	11 0 0
Bahia....	7 0 0	9 0 0
Box, Turkey ....ton	5 0 0	12 0 0
Satin, St. Domingo ....foot	0 0 5	0 0 9
Porto Rico	0 0 6	0 0 10
Walnut, Italian	0 0 3½	0 0 5
METALS.		
Iron—Bar, Welsh, in London...ton	4 15 0	5 0 0
,, ,, in Wales	4 5 0	4 10 0
,, Staffordshire, London	5 10 0	6 0 0
Copper—		
British, cake and ingot ....ton	49 0 0	49 10 0
Best selected	50 10 0	51 10 0
Sheets, strong....	54 10 0	55 0 0
Chili, bars	46 2 6	46 10 0
Yellow Metal....lb.	0 0 4½	0 0 5½
Lead—		
Pig, Spanish ....ton	12 17 6	0 0 0
English, common brands....	13 5 0	0 0 0
Sheet, English	14 2 6	0 0 0
Spelter—		
Silesian, special ....ton	16 17 6	17 0 0
Ordinary brands....	16 12 6	16 15 0
Tin—		
Straits....ton	131 10 0	0 0 0
Australian	131 10 0	0 0 0
English ingots	133 10 0	0 0 0
OILS.		
Linseed ....ton	19 0 0	19 5 0
Cocoanut, Cochin	30 0 0	32 0 0
Ceylon	24 0 0	0 0 0
Palm, Lagos	22 0 0	0 0 0
Rapeseed, English pale	25 10 0	0 0 0
,, brown	23 15 0	24 0 0
Cottonseed, refined	19 15 0	0 0 0
Tallow and Oleine	25 0 0	45 0 0
Lubricating, U.S.	5 0 0	6 0 0
,, refined	5 0 0	12 0 0
Turpentine—		
American, in casks ....cwt.	1 4 9	0 0 0
Tar—		
Stockholm ....barrel	0 15 0	0 0 0
Archangel	0 10 6	0 0 0

COMPETITIONS AND CONTRACTS.

Epitome of Advertisements in this Number.

COMPETITIONS.

Nature of Work.	By whom required.	Premium.	Designs to be delivered.	Page.
Linoleum and Floor-Cloth Designs	Mitcham Linoleum Co....	200*l.*	Not stated...	ii.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Kerbing, Tar-Paving, &c., Work....	Lewisham Bd. of Wks.	*Official*	Nov. 15th	ii.
Galvanised Iron Pails	Vestry of St. Matthew, Bethnal Green	do.	Nov. 16th	ii.
Removal of Refuse	St. Luke's (Middlesex) Vestry	do.	do.	ii.
Paving Works....	St. George's (East) Ves.	do.	Nov. 17th	ii.
Making-up and Paving Roads	Wandsworth Bd. of Wks	do.	Nov. 22nd	ix.
Road-making and Paving Works	Walthamstow Local Bd.	H. S. Ridings....	Nov. 25th	ii.
Re-Erecting Bridge	Oxford Local Board ...	W. H. White....	Nov. 29th	ii.
Tar-Paving, &c.	Met. Board of Works...	*Official*	do.	ix.
Exhibition Buildings, Brussels	....	Maxwell & Tuke	Not stated...	ii.

TENDERS.

ASHTEAD (Surrey). — For the erection of a lodge to Greville Park, for Mr. J. Hogett. Mr. Lionel Littlewood, architect, 9, Great James-street, Bedford-row, W.C.:—

Harris & Son, Woking	£707 0 0
Jones, London	610 0 0
Batchelar, Leatherhead....	588 0 0
Skilton, Leatherhead	578 0 0
Jackson, London	523 0 0
Hards, Ewell (accepted)....	497 0 0

ASHTEAD (Surrey).—For the erection of a cottage at Greville Park, for Mr. Payne Jennings. Mr. Lionel Littlewood, architect:—

Hards, Ewell....	£1,095 0 0
Harris & Son, Woking	1,050 0 0
Graham, London	857 0 0
Jones, London	750 0 0
Jackson, London	679 0 0
Batchelar, Leatherhead	667 17 6
Skilton, Leatherhead	640 0 0

ASHTEAD (Surrey). — For the erection of a house in Woodfield-lane for Miss Coates. Mr. Lionel Littlewood, architect:—

Hards, Ewell....	£1,149 0 0
Graham, London	1,026 0 0
Jackson, London	950 0 0
Jones, London	943 0 0
Skilton, Leatherhead (accepted).....	937 0 0

DERBY.—For the erection of new Sunday Schools, Lecture Hall, Infants' School, and Class Rooms, for the Trustees of the Derwent-street Congregational Church. Mr. J. Brierley Preston, architect, St. Mary's Gate, Derby. Quantities supplied by the architect:—

W. Walkerdine....	£1,120 0 0
R. Weston	1,085 0 0
T. Kelham	1,039 0 0
H. Vernon	1,038 2 0
C. Wagg	1,030 0 0
G. Pemberton	1,028 10 0
W. Eaton (accepted)	1,014 0 0

[All of Derby.]

For Heating Apparatus

A. Bingley, Nottingham....	**£89 10 0**
Astle & Co., Derby (accepted)	**77 0 0**

DULWICH.—For alterations, painting, &c., at the Rosendale Hotel, West Dulwich, for Mr. James Riddall:—

C. Strange	£185 0 0
Weedon & Smith	176 0 0
W. Groom	175 0 0
J. Stephens (accepted)	113 0 0

EASTBOURNE.—For building inn and premises at junction of St. John's Mill-road and Willingdon-road, Eastbourne, for Mr. H. E. Hurst. Messrs. Fuller & Oakden, architects, 10, Cornfield-road, Eastbourne. Quantities by Mr. Robey E. Carpenter:—

J. Martin	£1,790 0 0
Deadman....	1,789 16 0
M. Martin	1,770 0 0
Russell....	1,765 0 0
Miller & Selmes	1,747 0 0
J. Wood	1,695 0 0
Dore & Son....	1,617 0 0
Cornwell & Sons	1,595 0 0
Parker....	1,575 0 0
C. Wren	1,565 0 0
Newman & Hart	1,549 0 0
Haggett & Pattenden	1,545 0 0
Bishop & Thorpe	1,479 12 0
Stanbridge & Tupper	1,473 0 0
J. Hookham	1,395 0 0
Coster	1,208 0 0

GREENWICH.—For alterations and repairs at Nos. 80 to 94, London-street, Greenwich, for the Worshipful Company of Drapers. Mr. C. Reilly, architect:—

Holloway Bros....	£1,123 0 0
Staines & Son....	1,049 0 0
W. Smith & Son	1,020 0 0
Howell....	990 0 0
N. Lidstone	988 0 0
Jerrard....	947 0 0
Gaisford	794 0 0

HARROW.—For the erection of a residence at Harrow, for the Harrow Park Estate Company. Mr. W. C. Marshall, architect. Quantities by Mr. E. J. Pain:—

Brass & Son	£8,916 0 0
Estcourt	8,788 0 0
Foster	8,580 0 0
Bywaters....	8,365 0 0
Lee	8,314 0 0
Stimpson....	8,210 0 0
Nightingale....	8,150 0 0
Peto Bros.	8,102 0 0
Perry & Co....	8,044 0 0

HEMEL HEMPSTEAD.—For the formation of market-place and erection of shambles and three dwelling-houses with shops, for the Town Improvement Committee of Hemel Hempstead, Herts. Messrs. George & W. Ralph Low, architects. Quantities not furnished:—

W. Sear, Hemel Hempstead....	£3,469 0 0
Finchen & Smith, Tring....	3,269 0 0
G. Smart, Luton	3,219 0 0
J. Payne, Hemel Hempstead*....	3,028 0 0
Lissaman, Luton	2,585 0 0
C. Coote, London....	2,585 0 0

* Accepted.

KENSINGTON.—For the erection of a workshop, Stamford-road, W. Mr. Lionel Littlewood, architect, 9, Great James-street, Bedford-row, W.C.:—

Humphreys, Hyde Park (accepted) ...	£195 0 0

[Seven tenders received.]

KENSINGTON.—For the erection of new premises off Stamford-road. Mr. Lionel Littlewood, architect:—

Bryon....	£637 6 0
Willcock....	548 17 6
Kent....	497 0 0
Liney	420 0 0
Jones	389 0 0
Olson (accepted)	336 0 0

KENSINGTON.—For various alterations, 191, Earl's Court-road, S.W., for Messrs. Blake & Co. Messrs. Morley & Letts, surveyors:—

Wright & Co....	£250 0 0
Toten & Sons, Gloucester-road*	195 0 0

* Accepted.

KENSINGTON.—For sanitary and decorative repairs at 12, Penywern-road. Messrs. Morley & Letts, surveyors:—

Hook, Belgrave-road (accepted).....	£144 0 0

KENSINGTON.—For finishing No. 45, Nevern-square, S.W., for the Executrix of the late Robert Whitaker. Messrs. Morley & Letts, surveyors, Earl's Court-road:—

Rugg	£217 0 0
Oldrey....	167 0 0
Toten & Sons, Gloucester-road*	148 0 0

* Accepted.

KEW.—For decorations, Ellesmere, Kew-road. Messrs. Morley & Letts, surveyors:—

Blasby, Kew (accepted)....	£112 0 0

LEICESTER.—For the construction of about 470 yards of pipe sewers, with manholes, lampholes, and other works in connexion therewith, in the Borough of Leicester. Plans, specification, and quantities by J. Gordon, M. Inst. C.E., Borough Surveyor:—

		Alternative.
T. Smart, Nottingham.....	£744 8 0	... —
J. Dickson, St. Albans.....	459 17 1	... £457 9 7
Innes & Wood, Birmingham	425 1 9	... 414 7 0
S. & E. Bentley, Leicester*	366 2 2	... 350 19 2

* Accepted.

LONDON.—For the Victoria Concert Hall, Langham-place, Regent-street. Mr. T. E. Knightley and Mr. C. J. Phipps, F.S.A., architects. Quantities by Messrs. Batterbury & Huxley:—

J. Morter....	£48,714 0 0
Holliday & Greenwood....	47,420 0 0
Howell	46,900 0 0
Boyce....	46,850 0 0
Higgs & Hill....	46,733 0 0
Mowlem....	46,485 0 0
Nightingale	45,826 0 0
Perry & Co....	45,789 0 0
Lovatt, Wolverhampton	45,585 0 0
Stanley Bird	45,578 0 0
Brass & Son	45,555 0 0
Parnell, Rugby	45,400 0 0
H. & J. Greenwood	45,356 0 0
Peto Bros....	44,444 0 0
Patman & Fotheringham....	43,840 0 0
Stephens & Bastow	43,477 0 0
Bywaters	43,367 0 0
Kirk & Randall	43,346 0 0
Charles Wall	42,400 0 0
Lucas & Son....	42,225 0 0

LONDON.—For extra works at the Old Cock Tavern, Highbury, for Mr. Richard Baker. Mr. Arthur W. Saville, architect, 99, Strand, London, W.C.:—

Decorative Work for Grill Room.

C. E. Birch	£368 10 0
Doulton & Co.	353 0 0
Webb & Co.	350 0 0
Simpson & Sons (accepted)	350 0 0
Carter, Johnson, & Co.	345 0 0
Campbell Tile Co. (part only)	183 0 0

Gas Fittings.

Strode & Co....	£300 0 0
J. Dodson	245 0 0
Vaughan & Brown (accepted)	218 0 0
E. Fragnell	190 0 0

Grill and Hot-water Fittings.

T. Waller & Co. (accepted)....	£100 0 0

LONDON.— For alterations at the Milford Haven Tavern, Caledonian-road. Mr. R. A. Lewcock, architect, 88, Bishopsgate-street Within, E.C.:—

Stephenson	£204 0 0
Goodall	155 0 0
Spencer & Co....	153 5 0
Steel Bros....	140 0 0
Ivory	135 0 0

LONDON.—For repairs to No. 14, St. Luke's-road, W., for Mr. John Hughes. Mr. Arthur W. Saville, architect, 99, Strand, London, W.C.:—

J. Cutting & Sons	£185 0 0
C. H. Cutting & Sons....	181 0 0
Spencer & Co.	170 0 0
G. E. Lupton & Sons (accepted).....	141 0 0

LONDON.—For the erection of Beaufort Mansions, Queen Anne's Gate, S.W. Mr. S. C. Overton, architect:—

Perry & Co. (accepted)	£16,500	0	0

LONDON.—For reinstating warehouses at St. Katherines' Wharf, after fire, for the General Steam Navigation Company. Mr. A. R. Stenning, architect. Quantities by Mr. E. A. B. Crockett:—

W. Webster	£4,869	0	0
Macey & Sons	4,573	0	0
J. & J. Greenwood	4,444	0	0
Ashby & Horner	4,180	0	0
J. Sparkes	3,970	0	0
Cubitt & Co.	3,780	0	0
B. E. Nightingale	3,687	0	0
Outhwaite & Son	3,686	0	0

LONDON.—For re-building No. 21, Warwick-lane, Ludgate Hill, E.C., for Mr. R. Cook and Mr. Bradshaw. Mr. Alfred J. Beesley, architect. Quantities supplied:—

Williams	£1,590	0	0
Lamble	1,589	0	0
Lascelles	1,496	0	0
Heath	1,471	0	0
Puzey & Lumley	1,470	0	0
A. White & Co. (accepted)	1,389	0	0

LONDON.—For sanitary and other works at No. 7, Upper Brook-street, Grosvenor-square. Mr. T. Durrans, A.R.I.B.A., architect, 44, Upper Baker-street:—

J. Andrews	£398	10	0
R. Wright	382	10	0
Stanley Bird	370	0	0
T. Stevenson	369	0	0

LONDON.—For Portland and Bath stone front, 145, Cannon-street, E.C. Mr. Delissa Joseph, architect, 17, Basinghall-street, E.C.:—

Seale	£252	0	0
Herridge (accepted)	252	0	0

LUTON.—For alterations and additions to business premises, Walter-street, and Cheapside, Luton, for Mr. Albert Troll. Mr. A. E. Smith, architect, Luton:—

J. Saunders	£744	15	0
R. Ford	570	0	0
Neville Bros.	555	0	0
Slough Bros.	505	0	0
G. W. Pryer (accepted)	445	0	0

[All of Luton.]

PUTNEY.—For erecting dairy and premises, Lower Richmond-road, Putney, for Mr. William James. Mr. G. F. Calvert, architect, 52, Acton-street, Gray's Inn-road:—

Longland, 1, Castle-street, Long Acre	£1,354	0	0
Phillips, Manchester-street, King's Cross	960	0	0
Harling, Rodney-terrace, Putney	805	0	0
Borden, Gray's Inn-road, W.C.	798	0	0
Williams,* Derwent Works, Putney	789	0	0
Channon, Lower Richmond-road, Putney	643	0	0

* Accepted.

ROTHERHITHE. — For building parish room, All Saints, Rotherhithe. Messrs. Wilson & Beesley, architects. Quantities supplied:—

Heath	£870	0	0
Lamble	829	0	0
Puzey & Lumley	785	0	0
Pritchard	744	10	0
A. White & Co.	739	0	0
Williams	727	0	0
Johnson	710	0	0
Wells	677	0	0
Bullers	650	0	0

SALISBURY.—For the erection of new shop and dwelling-house in Catherine-street, for Mr. L. T. Fulker. Mr. Fred Bath, F.R.I.B.A., architect, Crown Chambers, Salisbury. Quantities supplied:—

F. Dibbin, Salisbury	£770	10	0
J. W. Hopkins, Wilton	748	10	0
G. Dolman, Salisbury	723	0	0
W. J. & C. S. Young, Salisbury	702	0	0
Gilbert Harris, Salisbury	698	0	0
Webb & Co., Salisbury (accepted)	610	5	0

TOTTENHAM.—For paving with asphalte the paths in Station-road and Jolly Butchers' Hill, Wood Green, for the Tottenham Local Board of Health:—

McCleod & Co.	£358	16	0
Trickett & Son	343	0	0
J. J. Griffiths	342	9	0
G. Bell	336	12	6
Bradshaw & Co., London and Tottenham (accepted)	326	17	1

UPTON, E.—For two houses in Boleyn-road, Upton, E., for Mr. Collins. Mr. H. Bethell, architect:—

W. Parsons, Plashet, E.	£750	0	0
Chicken, Plaistow	743	0	0
J. Baxter, Upton, E.	687	0	0
Allerton & Fox, West Ham	675	0	0
W. Wyles, Plashet (accepted)	628	14	0

WANDSWORTH.—For the erection of new offices for the Wandsworth Board of Works. Mr. W. Newton Dunn, architect. Quantities by Messrs. Franklin & Andrews:—

Parsons	£7,577	0	0
Brass & Son	7,550	0	0
Rider & Son	7,378	0	0
Aries & Son	7,050	0	0
Liddiatt	7,026	0	0
Shepherd	6,983	0	0
Downes	6,922	0	0
Kynoch & Co. (accepted)	6,385	0	0

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